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ORIGINAL ARTICLES

ARE THERE CERTAIN CASES OF MALOCCLUSION IN WHICH ORTHODONTIC TREATMENT IS CONTRAINDICATED?*

BY DR. B. FRANK GRAY, SAN FRANCISCO

ALL orthodontists of experience, I think, are convinced that there are conditions of malocclusion, the treatment of which will not produce results that warrant the procedure. The difficulty of the situation is to know what cases to let alone. One very popular way of finding out what cases will be failures is to treat them and see! It is the hope of aiding in the avoidance of some painful and expensive experiments that I have undertaken this study of the matter.

From the uncertainty that surrounds our diagnosis and prognosis in all too many cases, we need to be delivered. A desire to benefit those who suffer from the ills of malocclusion, including all sorts of facial disharmony, is a worthy ambition; but it is equally desirable that we shall have enough knowledge to recognize the limitations in a given case, thus obviating a prolonged treatment period which could only result in disappointment to the patient (or his parents) and chagrin to the orthodontist.

How complex are the problems of orthodontia! From the standpoint of a complete knowledge of the subject, how little we know! Yet, compared with the beginnings of the specialty a few decades ago, how far we have come!

I have propounded to myself and to a number of orthodontists in this country and abroad some ten questions on the subject of the paper. I shall give some of my own impressions of what the answers should be, followed by an excerpt from the replies to the questionnaire. I know you will agree with me as you leisurely go over them that they afford a most worthwhile contribution to the subject under consideration.

*Read before the Twenty-sixth Annual Meeting of the American Society of Orthodontists, Chicago, May 2-5, 1927.

1. *Age as a limiting factor.*

(*a*) Three to six years. I feel that in the *majority* of children within this age limit orthodontic treatment is contraindicated. The *minority* comprise important exceptions and would fall particularly into the classifications of distoclusion and mesioclusion.

While a good many students of the subject have contended wholeheartedly for the treatment of underdeveloped deciduous dentures (including those in which the so-called "growth spaces" are tardy in appearing) at the early age of three to six years, my own experience does not bear out the wisdom of this course as a general practice.

Those children affected with various forms of lip, tongue or finger habits, restricted nasal inspiration, faulty posture, etc., should benefit under the wise guidance of an orthodontist capable of rendering worth-while service in the correction of these habits. I have great respect for the teachings of Dr. Alfred P. Rogers. I only wish all orthodontists were fitted to carry on this work in a thoroughly intelligent manner.

Under any circumstances let us beware of keeping the deciduous denture under mechanical restraint throughout one-half or two-thirds of its functioning period. By the time the deciduous teeth are superseded by the permanent ones there is much likelihood we shall again need to resort to appliances. Thus the aggregate of orthodontic assistance may become "orthodontic interference" in a literal sense.

(*b*) Adult age. I am confident much can be done to improve the status of malocclusion and disharmony of related structures in adult life. However, the question of permanency of result is the *bete noire* in these cases. In such instances as those wherein the maxillary incisors occlude lingual to those of the mandible the retention is simple and would obviously be successful. The number of adult patients for whom orthodontic treatment is indicated is greatly restricted. As a rule women take more kindly to the inconvenience of the procedures than men. Very often men are failures as patients.

The fact that the development of the alveolar process is so largely a function of youth places great limitations upon the success of orthodontic operations for the adult. Unless we contemplate the indefinite use of some method of mechanical retention, the percentage of successes in such cases will be small. Therefore until that requirement is readily agreed to many adult consultants should be discouraged.

Dr. Ketcham has emphasized the prevalence of root absorption. Whether or not you are a "jiggle-proof" orthodontist it is entirely possible you may gradually amputate a few roots in dealing with adult patients.

2. *Conditions of oral health as limiting factors.*

Beyond question there are mouths in which caries is rampant and where the best skill of the competent family dentist or children's specialist may scarcely avail to stay the course of its ravages. We would serve such patients to better advantage by arranging a series of appointments simply for

observation purposes and cooperation with the family dentist to the end that the destructive process may be checked. Presently a period of greater immunity may supervene.

There are, of course, numerous lesions ranging from stomatitis to syphilitic manifestations, the presence of which would contraindicate orthodontic treatment.

Certain patients are brought to us for consultation presenting the most extreme degree of neglect of ordinary mouth hygiene. Shall we undertake to train them in this important direction, or shall we refer them to a competent periodontist for proper instruction? Certainly they are not fit subjects for orthodontic treatment until they "right about face" in this matter.

3. *Pyorrhea as a limiting factor.*

Pyorrhea is necessarily a limiting factor to orthodontic treatment. We are told by some of our leading periodontists that traumatic occlusion is a cause of pyorrhea. Now traumatic occlusion comes within the "sphere of influence" of the orthodontist. Thus I take it patients suffering from incipient pyorrhea due to this cause would do well to submit to a careful orthodontic correction. But here again we may remember that pyorrhea is usually a disease of adult life, so that we are doubly limited in our work. It is to be impressed upon the dental profession that proper orthodontic treatment in the period of youth will likely prevent the conditions referred to.

Beyond question true pyorrhea at whatever age would preclude treatment by the orthodontist. Whether true pyorrhea responds to the treatment of the periodontist to the point of cure may still be a mooted question. However it may be so controlled that our aid may be properly given at the opportune time. I have observed that the splinting or retaining of teeth that have suffered from pyorrhea is welcomed by the periodontist. If therefore some reasonable orthodontic procedures are resorted to the retaining of the teeth may serve a double purpose.

I feel we should emphasize the fact that countless numbers of adult cases requiring the beneficent aid of the periodontist had their inception in the uncorrected malocclusions of youth.

4. *Malfunction of the endocrine glands.*

Had I waited until this meeting to prepare my paper, I might have learned a bit more about endocrinology, since I am sure Dr. Howard's Round Table on this subject will bristle with knowledge.

One patient in my care a few years since convinced me that in acromegaly it may be better to refrain from acting on the impulse to be helpful. I doubt if the results justified the expenditure of time and effort to help the unfortunate boy in question.

I appeal to the members of this society if it does not require a superior degree of conviction that it is right to refuse treatment of those conditions of malocclusion which cause serious personal disfigurement and humiliation. Let us seek a broader knowledge in these directions to the end that we may serve more creditably those appealing to us for aid.

I think the majority of orthodontists see in the malfunction of the endocrine glands a hindering factor to our work that must be reckoned with. Still the subject seems so surrounded with uncertainty both as to diagnosis and prognosis that we can scarcely claim to have ventured far upon this field of study.

5. *Cleft palate.*

Orthodontia offers much to certain patients of this type. Some of the replies to the questionnaire call attention to the disregard of the permanent tooth germs by surgeons doing cleft palate work. I trust this neglect is not so prevalent as formerly. Certainly every reasonable effort should be made to save for the patient these priceless teeth which contribute so greatly to the beauty and usefulness of the denture. Of course where there are missing teeth some restoration must be made. This prosthetic work may serve several purposes, i.e., to restore the missing teeth, to supply an obturator, and to afford an efficient retainer of the arch following orthodontic correction.

Certainly conditions of cleft palate do impose great limitations to orthodontic treatment, but we are called upon to do what we can of a practical nature for these sufferers.

6. *Mental deficiency as a limiting factor.*

One or two respondents to the questionnaire with keen perception inquired whether I referred to the patient or to the orthodontist. If we ourselves were not quite so deficient mentally we might know how better to serve those patients commonly said to be subnormal in this regard, and for that matter our work would be still more successful for those patients more fortunate in their mental equipment.

An example falling under this classification in my practice has proved more cooperative and a better patient generally than numerous other children in my care against whose mentality no such diagnosis may be made. In the instance in question I am sure my efforts have not been in vain.

But like all borderline cases, good judgment and perception of an unusual order must be exercised lest we place under treatment certain patients so deficient that success is foredoomed.

7. *Adult cases and permanent retaining methods.*

The first thing I strive to learn from the adult applying for orthodontic aid is his exact mental attitude relative to the existing malocclusion. Only in case it develops that the deformity is a source of constant personal humiliation or that it very seriously limits the functions of the masticatory organs, am I disposed to encourage one in the possibility of a correction. In some instances I believe that a certain sensitiveness amounting virtually to an inferiority complex has its inception and continuance in serious disharmonies of the teeth and related structures. Frequently I have, in common with many others, noted a change in the very character of the patient as these deformities are gradually overcome. While this has particular reference to youth, it may likewise apply to the adult.

There are many adult cases we are entirely warranted in treating, but if the patient is not prepared to meet every requirement even to the wearing of certain retaining devices for an indefinite period of time we certainly should not attempt the correction.

I know of no surer way of testing my own motive, when consulted by patients of the type under discussion, than to think of the individual as a member of my own family, and what I would do under such circumstances. Beyond doubt I would undertake the correction of a health-wrecking, beauty-marring malocclusion, knowing the results might be only relatively satisfactory.

These cases afford entirely legitimate reasons for consultation with fellow-orthodontists of experience. Incidentally it seems to me orthodontists do not consult one another frequently enough. It is wonderful how the interchange of ideas about our problems will help to bring about their solution.

8. *Lack of cooperation.*

There can be no question that persistent lack of cooperation is a tremendous hindrance to an orthodontic procedure. While it works the greatest hardship on the patient himself it affords enough exasperation to the orthodontist to warrant the sternest sort of methods to bring about a change of attitude.

Unfortunately we do not ordinarily find out that these patients are not desirable subjects for orthodontic assistance until much time and effort have been expended. Then there is always the hope of reform. Often, however, we would discourage or refuse treatment were we able at the outset to foresee a serious lack of cooperation. I believe that in some instances refusal to go on with the correction would serve to bring the patient as well as the parents to their senses, when a fresh start might be made with far more hope of a successful outcome. Once the patient is under treatment I realize the obligation felt by the orthodontist to bring about the desired result. Our pride of accomplishment is at stake and we hesitate even under the most serious handicaps to acknowledge failure.

9. *Qualifications of the orthodontist who treats advanced cases.*

Some have indicated that they themselves might be disqualified if they had to fulfil the requirements that might be outlined in a truthful answer to this question.

One or two have expressed the feeling that the degree of ability of the specialist should be the same for treating the simpler cases as those we are in the habit of characterizing as advanced cases. I dissent from that opinion. I think most of the cases falling within the scope of the questionnaire call for maturity of judgment and an order of skill superior to that which might enable one to produce gratifying results in less complicated cases.

10. *Other types of malocclusion we ought not to treat.*

In the so-called "open bite" or neutroclusion cases most orthodontists recognize an opportunity for a real test of their skill. The fact that malocclusions of this type are so unwelcome in many offices suggests the limitations accompanying their treatment.

The investigations of Dr. Lundström suggest the problem accompanying those cases in which the "apical base" is seriously underdeveloped. Here again beyond doubt is presented a limitation that we may do well to consider.

Finally, I have not attempted to incorporate in this introduction to the questionnaire the splendid suggestions of the respondents themselves. I can promise you much profit in studying the different viewpoints which are often set forth so tersely as to be compelling.

I am indebted to my friend, Dr. James D. McCoy for his encouragement in attempting this inquiry.

I want to thank President Eby for expressing satisfaction with the proposed questionnaire. I share his thought that such a "cross-section" of opinion is very apt to bring to the surface the best procedures in the circumstances known to our specialty.

Answers to Questionnaire: "Are There Certain Cases of Malocclusion Where Orthodontic Treatment Is Contraindicated?"

1. What may be said of "age" as a limiting factor?

a. Early childhood—three to six years.

Dr. Alfred P. Rogers, Boston, Mass.:

Age, of course, must be a limiting factor in the treatment of malocclusion. Experiences have shown that comparatively little constructive work can be done between the years of three and six that will prove of permanent value. There are, of course, some forms of malocclusions which during these years must be corrected, especially is this true in the treatment of pernicious habits, but it has been observed by several careful men that in many of these younger cases unexpected developments take place, while in others of course maldevelopments continue.

Dr. A. C. Lockett, London, England:

I do not think there is much to be gained in starting treatment before six years of age as a general rule. Simple cases may benefit.

Dr. James D. McCoy, Los Angeles, California:

In my opinion the number of cases which should be undertaken with the deciduous teeth only present are extremely rare. The only cases where I believe we are justified in undertaking treatment earlier than the sixth year are those in which the malocclusion is very extreme. Such cases are rather rare in any practice. I believe the practice of treating deciduous arches where the teeth are in function but developmental spaces do not appear when they are supposed to is absolutely wrong.

Dr. Herbert A. Pullen, Buffalo, New York:

This is frequently an age when prolonged treatment may be of little avail in assisting in the growth of the jaws. Cases should be selected for treatment at this age wherein a distinct service can be rendered such as the maxillary linguoversions of the neutroclusion class, habit cases, et al.

Dr. A. H. Ketcham, Denver, Colorado:

In Class I cases early childhood, three to six years, is a limiting factor, and treatment had better be delayed. But Class II and III cases may be treated at this early age to advantage.

Dr. Burt Abell, Toledo, Ohio:

Move teeth only if jaws are in malrelation, or position of teeth would lead to it.

What may be said of "age" as a limiting factor? (Cont'd.)

Dr. Harry E. Kelsey, Baltimore, Maryland:

There are many cases including such conditions as cleft palate, ankylosis and the result of accidents, together with some cases which show a serious inhibition to development, which should be treated at as early an age as is possible. If at all uncertain about it, six months' to a year's delay, with the case under observation, is always a safe procedure and may show the wisdom of delaying treatment or may obviate the necessity for it altogether.

Dr. H. L. Morehouse, Spokane, Washington:

I do not advocate treatment before five years except in extreme cases.

Dr. Walter H. Ellis, Buffalo, New York:

Only a limitation in cases where we are unable to get cooperation of patients. As early as maldevelopment is found to be present, means to correct it should be initiated either by advice as to habits, corrective exercises or orthodontic appliances.

Dr. John R. McCoy, Los Angeles, California:

Only in those cases where the mandible may occupy a mesial or distal relationship do I believe in early orthodontic interference and then three years of age is none too soon.

Dr. Charles C. Mann, Seattle, Washington:

Early age, three to five years, in some cases I should consider a limiting factor due to lack of understanding and fear on the part of the child.

Dr. Harold Chapman, London, England:

Treatment should be begun as early as the malocclusion is diagnosed and as early as treatment is practicable; the latter is usually five to six years of age, occasionally earlier.

Dr. C. A. Hawley, Washington, D. C.:

In extreme protraction or distraction of the mandible early childhood, three to six years is a limiting factor.

Dr. Joseph D. Eby, New York City:

Never begin treatment at this early age excepting where conditions are too extreme to countenance, or serious functional disturbances exist. Examples: early manifestation of mesioclusion, or where buccal cusps of upper posterior teeth fall into occlusal grooves of lowers.

Dr. Lloyd S. Lourie, Chicago, Illinois:

Lack of developmental spaces not an indication for treatment at this age. Treatment indicated in Class III. In Class II muscle exercises and possibly some trimming of deciduous cuspids should be tried before appliances.

Dr. Allen H. Suggett, San Francisco, California:

In distal or mesial bite of the incisors I would proceed as soon as I could handle the patient. In several cases I have placed bite planes on the maxillary centrals to jump bite for two-and-one-half-year olds. I would think it not advisable to attempt extensive movements.

Dr. V. E. Barnes, Cleveland, Ohio:

Under five years a child is almost always too young to have the mentality necessary for successful results. Best age to start treatment is five to six and one-half years. *Proper* treatment at early ages permits permanent teeth to erupt more normally and relieves stress eruptions.

Dr. Leuman M. Waugh, New York City:

Treat only very few at three, mostly to help break habits. Treat many at five and one-half to six for production of developmental spacing.

What may be said of "age" as a limiting factor? (Cont'd.)

Dr. B. E. Lischer, St. Louis, Mo.:

After the third year, age is not a limiting factor in many instances; the behavior or demeanor of the child may be the more important consideration. In my experience, very early treatment is only indicated in cases of extreme deformity. So many subsequent complications may prolong the treatment to such an extent that ultimate success is frequently defeated because the patient grows weary.

Dr. Albert W. Crosby, New Haven, Conn.:

Four years is as early as I care to take cases except in emergencies. Children are not easily controlled before that age.

Dr. C. C. Howard:

Temperament of young children, with no parental control, precludes successful treatment. Simple Class I cases with mild deficient width are not treated in my office but placed on observation list. Class III cases deserve interference as early as possible, also severe cases of Class II.

b. Adult age.

Dr. Rogers:

At one time it was thought that adult age was a bar to orthodontic procedure. Recent years have proved that proper methods may be used with great effect in certain adult cases. In my own experience very satisfactory results were obtained for a patient about forty years of age, the result being not only better occlusion but greater general health for the mouth. The factors of experience and judgment in relation to cases of either the young or old are of the greatest importance, and men of inexperience should be extremely cautious regarding the treatment at either extreme. It is not good practice to put children through years of treatment from four to fifteen, as has been done in the past, when undoubtedly many of these cases if proper judgment was used could be treated in a very short period of time.

Dr. Lockett:

Given similar types of individuals with an irregularity to be treated I find that adult age offers as good chances of success as childhood in types which lend themselves kindly to treatment without extraction. In like manner another type of individual which will not respond to the test of a treated case in childhood giving permanent results in adult life in spite of the fact that normal occlusion had been obtained, will give a permanent result treated in adult life if the right teeth are extracted.

Dr. James D. McCoy:

I believe only such adult cases should be treated which promise permanency of results. Frequently this will necessitate more or less permanent retention and unless the patient can be depended upon to give intelligent cooperation I believe such cases should not be attempted. It is difficult to state an age limit but it seems to me that after a patient has reached thirty years of age, tooth movement unless very limited in character should not be attempted.

Dr. Pullen:

Adult age is often a limiting factor when the malocclusion is slight and yet difficult to correct; when the case is too complicated to be assured of an improved or permanent result; when the teeth or their investing tissues are badly broken down, and in any case when the result that might be obtained would not compensate for the effort and expense entailed.

Dr. Ketcham:

No arbitrary limit if patient may be benefited.

Dr. Abell:

Treatment contraindicated after thirty years if at all extensive. Too "nerve-racking."

What may be said of "age" as a limiting factor? (Cont'd.)

Dr. Kelsey:

There is no age limit for successful orthodontic treatment. Remarkable changes may be brought about at any age, though changes become progressively slower with advancing age. After maturity notable changes may be made in the position of the teeth but much alteration in the shape or size of the jaw cannot be hoped for with any means as yet at our disposal.

Dr. Morehouse:

Dependent on character of case, health of individual and temperament. Twenty-seven to thirty years if result means improved health and the above conditions are as nearly ideal as possible.

Dr. Ellis:

I do not favor treating adult cases. Only in well selected cases is it advisable. (See answer to question 7.)

Dr. John R. McCoy:

In the cases of adults where treatment seems indicated I would certainly feel that thirty years of age should be the limit, beyond which no case would seem practical to me.

Dr. Mann:

Adult age is a decidedly limiting factor except in limited treatment for esthetic results.

Dr. Chapman:

I prefer treatment to be completed at twelve to thirteen years. I do undertake cases at later ages, but only because I hope the advantages of the treatment will outweigh the disadvantages; my tendency is to employ extraction as part of the treatment in these later cases. I would not undertake treatment of a case at age sixteen or later unless for very special reasons.

Dr. Hawley:

I have treated a number of patients at thirty-five to forty.

Dr. Eby:

I have an aversion to adult work and never attempt it unless the preventive aspect of impending functional disaster renders the situation imperative, or in cases where the tendency for self-retention or simple retention is apparent.

Dr. Lourie:

Certain extensive operations or changes should not be undertaken. Patient should assume some risk of permanent retention being necessary; also possibility of gum recession in some cases.

Dr. Suggett:

Correction of malocclusion is contraindicated in patients forty to fifty years of age, but I do not doubt that it could be done. I have made very extensive movements of the teeth in patients between thirty and forty. We are moving teeth that are to be used for piers for bridges in mouths at any age they present at the clinic of the University of California Dental School. I am just finishing the bringing down to position of an impacted cuspid for a woman over fifty. The reaction is no different from the ordinary.

Dr. Barnes:

Exceptional cases with thorough cooperation often prove very satisfactory, providing general health is good and providing too much treatment is not attempted. Partial orthodontia and restoration retention of permanent character are usually necessary.

Dr. Waugh:

Individual tooth movement, i.e., to facilitate proper restorations, etc. may be undertaken up to fifty years. For reshaping of arches seldom beyond thirty years.

What may be said of "age" as a limiting factor? (Cont'd.)

Dr. Lischer:

In adult life treatment should only be undertaken if the oral health of the individual is good and full cooperation is assured. Symptoms of approaching senility, i.e. atrophic gingivitis, and pericementitis in its various forms, must be considered.

Dr. Crosby:

General treatment should seldom be started after 18. Palliative treatment has been undertaken up to thirty, and regional treatment for bridge-work or pyorrhea splints into the fifties.

Dr. Howard:

A better placement of tooth relationship is desirable in some patients of adult age. Treatment depends entirely on type of malocclusion. General, osseous growth being complete, jaw growth is also complete.

2. **What may be said of conditions of "oral health" as limiting factors?**

Dr. Rogers:

Some conditions may be limiting or prohibiting factors, but I can think of many cases where poor oral health is a determining factor regarding treatment. Oral health never exists without proper functioning; therefore if there is a possibility of establishing function unhealthy oral conditions become determining factors.

Dr. Lockett:

Unless the cooperation of the orthodontist and the patient can ensure oral health during treatment the patient's future oral health is jeopardized.

Dr. James D. McCoy:

Orthodontic treatment should not be attempted in mouths where any acute or chronic infectious conditions are present. If these are cleared up through treatment and their recurrence prevented by proper oral hygiene and furthermore if the patient is willing to cooperate in giving this, there is no reason why orthodontic treatment should not be carried forward.

Dr. Pullen:

Numerous devitalized teeth and infected areas around many of the teeth are limiting factors in the treatment of adult cases. Badly decayed teeth and teeth of children in which large surfaces of so-called "white decay" are found (also present limitations) in the treatment of malocclusion.

Dr. Ketcham:

Remove foci of infection first, in so far as possible.

Dr. Abell:

If by this you mean "prophylactic" conditions, on general principles one would expect to find cleanliness a factor in good results, and per contra poor results follow without it. But often one sees a patient with very resistant tooth tissue come out of a long treatment with fine results even though at no time were the teeth kept clean. Conditions of teeth, resistance to decay, general health of patient, etc., must be considered.

Dr. Kelsey:

The mouth must be healthy or progressing toward health before any orthodontic interference can be instituted and the complexity and severity of the treatment must bear a reasonable ratio to the tolerance of the patient's tissues.

Dr. Morehouse:

Congenital disease, if apparent, any inflammatory condition of the soft tissues until cured, lack of care and attention on the part of patient and parent as to hygiene of the mouth during treatment are all limiting factors.

What may be said of conditions of "oral health" as limiting factors? (Cont'd.)

Dr. Ellis:

All pathologic conditions should be corrected or treatment for an early return to healthy conditions commenced before orthodontic treatment is undertaken.

Dr. John R. McCoy:

Nothing is more discouraging to the orthodontist than unhealthy or unkept oral tissues and I feel that any prospect of good results could hardly be expected under such circumstances. If such conditions can be foretold no treatment should be undertaken until this is corrected.

Dr. Mann:

If by oral health is meant physical condition it is a factor limiting or favorable in direct ratio to the degree of oral health.

Dr. Chapman:

In cases where oral health is not average or better I am inclined to decide against any treatment whatsoever, i.e. where caries is rampant, but if this is confined to the deciduous teeth I will undertake the treatment; of course there are cases in which the oral health would be benefited by treatment: these are undertaken.

Dr. Mershon:

I never place or leave appliances on with any form of gingivitis or gum infection present, and I will not continue treatment in cases where the mouths are not given reasonable attention by the patient.

Dr. Hawley:

Restrictive if not cured.

Dr. Eby:

Orthodontic measures contraindicated in the presence of

Caries
Salivary calculus accumulative
Serumal calculus accumulative
Chronic suppurative periodontoclasia
Chronic extensive periodontoclasia of certain types
Pericemental infections
Dentoalveolar infections
Unhygienic hypertrophy
Chronic persistent hypertrophy
Seriously neglected hygiene
Any organized or definite infection

Dr. Lourie:

Mouth should be put in healthy condition before orthodontic treatment.

Dr. Suggett:

Oral health would not deter me, for I would expect to correct that if it was caused or aggravated by the malocclusion, but a general health condition should be seriously considered.

Dr. Barnes:

Good oral health is essential. Abscessed teeth must be eliminated or successfully treated. Gums must be pink and healthy for best results. All decayed teeth must be filled before treatment is begun.

Dr. Waugh:

Oral health is dependent mostly upon general health and when systemic disturbance is reflected in the mouth orthodontic treatment is contraindicated until general health becomes normal or promises to be. Proneness to caries is sometimes so marked as to contraindicate beginning treatment and also demands removal of appliances until overcome.

What may be said of conditions of "oral health" as limiting factors? (Cont'd.)

Dr. Lischer:

Oral health, or a measurable approach to the same (in case the oral deformity is regarded as an obstacle) should always be considered.

Dr. Crosby:

It is a doubtful policy to undertake treatment of cases where there is extensive active caries or much decalcification, especially if they cannot be controlled by diet and prophylaxis.

Dr. Howard:

I would not institute orthodontic treatment without normal health.

3. **What may be said of "pyorrhea" as a limiting factor?**

Dr. Rogers:

This question was partly answered in reference to the adult case in 1-b. Of course the intensity of the pyorrhea infection and its duration constitutes a condition which may make pyorrhea a factor in the treatment of malocclusion. Coupled with this, of course, is the limitation of age.

Dr. Lockett:

Children with irregularities untreated are to a large extent earmarked for future pyorrhea, even if it is not present in childhood: it does not necessarily follow that treatment produces pyorrhea although it may be a predisposing factor.

Dr. James D. McCoy:

Mouths where true pyorrhea is present should not have orthodontic treatment. If the condition is pseudopyorrhea or gingivitis there is no reason why treatment cannot be carried out as soon as all pathological involvements have been eliminated.

Dr. Pullen:

Pyorrhea is always a limiting factor, and in its worst form indicates surgical cleaning up of the mouth rather than orthodontic treatment, with the possibility of prosthetic restorations.

Dr. Ketcham:

In early stages pyorrhea may be arrested and malocclusion treated.

Dr. Abell:

Pyorrhea must be eliminated before treatment is started. Treatment is contraindicated if there is too much waste of tissue supporting the teeth.

Dr. Kelsey:

I have treated some cases with success, the object being to cure or improve the condition of teeth which were said to be suffering from pyorrhea. This would be only where the malocclusion, through traumatism, food packs, or possibly some other condition, was the cause.

Dr. Morehouse:

I do not consider cases where any pyorrhea is indicated as having been present, even if not present at the time.

Dr. Ellis:

Orthodontic treatment is not advisable in cases where true pyorrhea is present. Complete cure of the pyorrhea would remove the contraindications if other factors were favorable.

What may be said of "pyorrhea" as a limiting factor? (Cont'd.)

Dr. John R. McCoy:

Each case must be judged separately but as a rule where any considerable pyorrhea has developed then the case from the orthodontist's standpoint had better be left alone.

Dr. Mann:

Positively a limiting factor, governed by the extent of the damage to the supporting osseous and membranous structures.

Dr. Chapman:

I have no experience in these cases except in the case of a boy of twelve with pyorrhea condition of upper and lower incisors; case lost sight of after considerable treatment and improvement, but it is doubtful if the pyorrhea condition were improved. I do not think so. He had one of the worst overbites I have ever seen in a Class II, division 2, case. As a rule such cases are not suitable for orthodontic treatment.

Dr. Mershon:

It would depend entirely upon the stage of the disease.

Dr. Hawley:

Pyorrhea must be controlled before treatment is begun.

Dr. Eby:

I believe orthodontia has a great deal to offer in the presence of certain pyorrheal conditions:

When teeth are vital and radiographs affirm the fact that the apical half to two-fifths of single rooted tooth sockets is intact.

When bifurcations or single roots of multirooted teeth are not exposed.

Dr. Lourie:

Mouth should be put in healthy condition before orthodontic treatment.

Dr. Suggett:

As there are many phases of pericementitis it would depend on which one we are dealing with. If it is diffused pericementitis the prognosis is not favorable. In short if it is a form that is amenable to treatment it would be advisable to proceed, for the correction of the malocclusion would favorably affect the whole mouth.

Dr. Barnes:

Pyorrhea contraindicates treatment. Adult patients with this evil factor should not be treated until that factor is removed. Treatment after cure of active pyorrhea necessarily must be limited.

Dr. Waugh:

It is unwise to attempt tooth movement in pathologic supporting structures.

Dr. Lischer:

Affections of the tissues of attachment are a serious matter and orthodontic treatments rarely exercise a corrective influence upon them. True, such cases are doomed, ultimately, but their fate is hastened by useless orthodontic treatment.

Dr. Crosby:

Incipient pyorrhea may be improved by orthodontic treatment and traumatic occlusion relieved. Advanced pyorrhea can only receive palliative treatment and requires permanent retention.

Dr. Howard:

Systemic pyorrhea would preclude orthodontic treatment. Traumatic pyorrhea would be benefited by orthodontic treatment.

4. What may be said of malfunction of the endocrine glands as a limiting factor?

Dr. Rogers:

There is so much that might be said regarding the malfunctioning of the endocrine glands as a limiting factor that its consideration, even with our present imperfect knowledge, would constitute a book.

Dr. Lockett:

I don't know.

Dr. James D. McCoy:

In those instances of marked disturbance of the ductless glands which are producing distinctive developmental changes orthodontic treatment is contraindicated.

Dr. Pullen:

Malfunction of the endocrine glands, if it can be recognized, unless it be of a very severe nature, such as hypopituitarism, etc., is not necessarily a limiting factor in the treatment of malocclusion.

Dr. Ketcham:

In acromegaly and probably other types of disturbances there is little hope for results unless condition of malfunction is corrected.

Dr. Abell:

We *know* so little about this, one can only guess. Any stimulus of tissue of jaws might aggravate symptoms in acromegalous cases.

Dr. Kelsey:

As to malfunction of the endocrine glands about five large volumes has already been said without giving us anything very definite to work on. Yet I am absolutely convinced that the endocrine gland system exerts a profound influence on growth and development.

Dr. Morehouse:

A debatable question as to what extent the glands are a factor for or against bony development.

Dr. Ellis:

If the malocclusion were the result of the endocrine malfunction orthodontic treatment would be contraindicated until the malfunction was corrected; otherwise failure would be the result. In cases where the malocclusion was caused by other etiologic factors the prognosis for orthodontic treatment would be proportionately favorable as these factors were definitely located, controlled, or eliminated.

Dr. John R. McCoy:

There are many cases where growth is far from normal and it is quite apparent that some internal deficiency is responsible. Unless these conditions can be overcome the prognosis is hardly good.

Dr. Mann:

Developmental and reconstructive processes are impossible without a normal functioning of the endocrine glands.

Dr. Chapman:

There is insufficient knowledge on which to base a definite opinion, but I should say that extraction (perhaps plus appliances) should enter into the treatment, if it will simplify it.

Dr. Mershon:

Our best authorities still claim so little definite knowledge of the subject that definite opinions are still guesses.

What may be said of malfunction of the endocrine glands as a limiting factor? (Cont'd.)

Dr. Hawley:

Diagnosis too obscure to have great weight.

Dr. Eby:

Nothing therapeutically. Causes may be traceably recognized in faulty calcium-phosphate metabolism, or in the actual formation of teeth individually: their absence, quality, shape and size, which becomes largely a problem of dealing with the effect rather than the cause.

Dr. Lourie:

Possible difficulties should be explained. I would prefer to postpone orthodontic correction if endocrine treatment is contemplated, but the mere possibility of endocrine malfunction should not prohibit orthodontic effort.

Dr. Suggett:

Malfunction of the endocrine glands would be of the utmost importance to consider.

Dr. Barnes:

Malfunction of the endocrine glands is probably a great limiting factor. No evidence to date is clear enough to allow positive conclusions.

Dr. Waugh:

I studied this subject with a class of three dentists and twelve physicians from 1914 to 1917, both theoretically and clinically, and came to the conclusion that to the present so little is known that is of real clinical value that much of what has recently appeared in our literature is guess work.

Dr. Lischer:

Endocrinology may shed some light on causative factors, and in some cases of slow response to treatment it may finally help us over difficulties, but our present knowledge is too indefinite to warrant acceptance of its speculative doctrines.

Dr. Crosby:

Hypothyroidism may be the cause of much dental caries. Orthodontic treatment should not be undertaken until after this condition has been controlled by the physician. Orthodontic treatment in cases where there is a taint of hyperpituitarism seems to stop the progress of overgrowth.

Dr. Howard:

Orthodontic treatment on acromegalics whose hypophysis is in an active state of imbalance would have no influence on jaw maldevelopment. Types of dwarfism, believed to be caused by a hypofunction of the anterior lobe of the hypophysis could not be corrected and *maintained* orthodontically. Such malocclusions are distinctly correlated. It is quite doubtful whether the majority of cretins and Mongolian idiots could be successfully treated, etc.

5. **What may be said of cleft palate and harelip as limiting factors?**

Dr. Rogers:

Orthodontic treatment is practically imperative in cleft palate and harelip sufferers. Their complete success is practically beyond reach, but frequently prosthetic restoration must be resorted to. The degree of success depends largely upon the number of tooth germs which are left to continue their normal development following the operation. Some operators destroy tooth germs ruthlessly making orthodontic procedure extremely difficult.

Dr. Lockett:

In cleft palate and harelip cases an orthodontist can only make a big effort to do his best for the unfortunate patient.

What may be said of cleft palate and harelip as limiting factors? (Cont'd.)

Dr. James D. McCoy:

Cleft palate and harelip while limiting the possibilities of orthodontic benefits do not contraindicate treatment. In fact in such cases the orthodontist may frequently render services of great benefit.

Dr. Pullen:

A harelip presents a definite limitation to orthodontic treatment unless operated on. Cleft palate presents many interesting problems in occlusal restorations whether operated on surgically or not.

Dr. Ketcham:

Patient may usually be benefited through orthodontic treatment.

Dr. Abell:

I hope to give a case report on this sometime if I succeed.

Dr. Kelsey:

I do not think harelip and cleft palate are limiting factors. I think they are quite the reverse; that is, they are conditions which demand our early and long continued and best efforts. They are undoubtedly factors limiting the character of results which can be obtained, because they vary so greatly as to the severity of the abnormality present.

Dr. Morehouse:

In cleft palate cases in which there has been a bony union established it is justifiable in endeavoring to improve conditions. The existing conditions in the specific case would have to be the determining factor.

Dr. Ellis:

Only limiting in that there are usually missing teeth which necessitates the placing of artificial substitutes resulting in a partial compromise as compared to the ideal. This type of case usually needs the assistance of the orthodontist. He should be called in for consultation and corrective treatment at an early age in order that orthodontic stimulation may be brought into the case so as to assist in growth and development of the arches working with the deciduous and permanent teeth as a means to this end.

Dr. John R. McCoy:

Only where the patient is willing to wear a permanent retainer is even an "operated case" of cleft palate going to have results which are satisfactory.

Dr. Mann:

From my experience in three cases I have treated they are decidedly limiting factors but treatment is certainly not contraindicated. With careful procedure I know that much improvement can be accomplished.

Dr. Chapman:

These cases present an entirely different aspect of orthodontic treatment and it may well be that where there is a good lower arch the upper teeth may be easily placed in good relations with the lower ones and retained there by the appliance which carries any missing teeth and acts as an obturator.

Dr. Mershon:

Where harelip and cleft palate have been operated on much good can be done by orthodontic treatment.

Dr. Hawley:

All depends on the case.

What may be said of cleft palate and harelip as limiting factors? (Cont'd.)

Dr. Eby:

My practice is to render the treatment of malocclusions associated with cleft palate as simple as possible to be thoroughly effective.

I believe in expanding the posterior teeth into occlusal positions of mechanical advantage, the removal of all remaining anterior teeth poorly invested in or adjacent to the site of the cleft, the insertion of a permanent retainer-plate—bearing anterior teeth, to produce a maximum improvement to appearance, and the "explosive" sounds which require the anterior portion of the palate. I do not believe in temporizing methods requiring forever and a day.

Dr. Lourie:

Movement of teeth adjoining cleft may be limited. Cleft might be widened by orthodontic expansion. Tight lip operation might limit expansion of dental arch.

Dr. Suggett:

I am experimenting with a number of such cases at the University of California Clinic and there seems to be no doubt that the teeth should be moved into the proper position irrespective of the opening up of the cleft and then by means of plates, obturators or operations the other abnormal conditions corrected. All such cases can be improved by moving the teeth into correct position and straightening out the folding and lapping of the soft tissues that cause a continual inflammation.

Dr. Barnes:

Necessarily limiting. However, such cases need a limited orthodontic treatment which properly given is of inestimable value to such patients.

Dr. Waugh:

A sensible, practical result should be the aim. Much can be done in average cases to aid proper restoration.

Dr. Lischer:

The end results following surgical procedures for congenital cleft palate constitute a very trying group of oral deformities for the most skillful and experienced orthodontists. The very marked reduction in size of the oral fissure after operation for harelip adds an additional difficulty of no small amount. The anomalous denture is far less accessible in such instances and surgeons should be apprised of the difficulties which careless operations produce.

Dr. Crosby:

Concensus of opinion among surgeons in this vicinity seems to be that it is quite safe and practical to treat cleft palate cases which have not been operated on too recently. Harelip must be operated on before retention is placed.

Dr. Howard:

Considerable scar tissue of the upper lip will not allow upper incisors to remain labially to the lower incisors. I have Dr. Blair of St. Louis to also substantiate my own *sad* experience in this regard.

6. **What may be said of mental deficiency as a limiting factor?**

Dr. Rogers:

Mental deficiency is practically always a limiting factor.

Dr. Lockett:

I would leave such cases alone.

Dr. James D. McCoy:

I do not believe that children who are mentally deficient can give the degree of cooperation essential to the success of orthodontic treatment. Especially is this true of those cases in which the condition is exaggerated to the extent that they may be classified as idiots.

What may be said of mental deficiency as a limiting factor? (Cont'd.)

Dr. Pullen:
Mental deficiency presents a most decided limitation to orthodontic treatment unless in the more favorable cases results that may be obtained may succeed in ameliorating repulsive deformities and facial lines to such an extent as to relieve great sensitiveness, anxiety, or humiliation of the parents.

Dr. Ketcham:
Many times patients may be benefited physically and then mentally through improved health.

Dr. Abell:
Very likely mental deficiency would interfere with patient's cooperating in the work. to say the least. Often a laxness of facial muscles in certain types would prevent permanency of results.

Dr. Kelsey:
Some cases which show a very definite retarded mental development have proved good orthodontic patients and good results have been obtained. Others have been very difficult and some are impossible.

Dr. Morehouse:
In some cases the results might be worth while. I am treating one now of a very pronounced Class II case.

Dr. Ellis:
Yes, mental deficiency is decidedly a limiting factor, whether it is of the orthodontist or the patient, particularly the former.

Dr. John R. McCoy:
Lack of cooperation of the patient, the result of mental deficiency is bound to prevent one obtaining satisfactory results. In most cases I believe that in this type treatment is contraindicated.

Dr. Mann:
I consider that treatment is absolutely contraindicated in these cases.

Dr. Chapman:
These cases are not suitable for any form of treatment, unless extraction alone will give benefits.

Dr. Mershon:
Are you referring to the patient or to the orthodontist?

Dr. Hawley:
Depends upon the case.

Dr. Eby:
Mental deficiency necessarily plays a very serious part against successful orthodontic procedure, including intractability. Absence of cooperation, causes embarrassing habits, the value of the results not justifying the effort.

Dr. Lourie:
Mental deficiency in the patient may make it difficult to work for him and may prevent success in cases where his cooperation is absolutely necessary.

Dr. Suggett:
Mental deficiency would not be a limiting factor if the patient were not violent and it was possible for the orthodontist to secure a reasonable amount of cooperation.

What may be said of mental deficiency as a limiting factor? (Cont'd.)

Dr. Barnes:

Notably deficient mental cases are not worth the great effort necessary. Over fifteen years ago I treated several such cases with decided improvement in relief of nerve strain, breathing, speech, hearing and some improvement in tractability, but the great effort made did not seem worth while.

Dr. Waugh:

I regard mental deficiency as a strong limiting factor. I have become heartless enough to want to work for children in whom there is the possibility of vigorous useful citizenship.

Dr. Lischer:

Mental deficiency is a serious handicap and may even preclude treatment.

Dr. Crosby:

I have had little success in treating mentally deficient children. I do not think our treatment alone is of much benefit.

Dr. Howard:

Mental deficiency, per se, would preclude cooperation.

7. **What may be said for and against the treatment of adult cases, it being understood that some permanent retaining method is required?**

Dr. Rogers:

This can hardly be answered intelligently without considering specific instances, but a general statement may be made as follows: Treatment in adult cases where permanent retentive methods are required is very often of great value to the patient. In certain other instances closing up spaces might constitute the best treatment.

Dr. Lockett:

There are many ways in which adult cases may be treated, most of which may be considered as unorthodox. If a case is to be permanently retained it ought not to receive orthodox orthodontic treatment.

Dr. James D. McCoy:

I believe that the universal treatment of adult cases is contraindicated. On the other hand I believe that selected cases may be handled with benefit to the patient.

Dr. Pullen:

Frequently adult cases may be vastly improved by orthodontic treatment even where a permanent and preferably a removable retaining appliance is indicated.

Dr. Ketcham:

If we are true members of the healing art it is our duty to try to help where there may be a reasonable hope for success.

Dr. Abell:

If patient fully understands beforehand that a retaining device must be worn permanently or continually, but that the treatment will bring about desired dental efficiency or improved cosmetic effects she should be allowed to make deliberate choice.

Dr. Kelsey:

I recommend treatment in all cases in adults where I believe an improvement can be secured both in function and in looks; also in cases where the cosmetic reason is the only one, providing the patient desires it enough to cooperate heartily. I have never seen any ill results follow orthodontic treatment in adult cases.

Dr. Morehouse:

I do not advocate treatment where permanent retaining is indicated except where there is a loss of some teeth and a plate or bridge is indicated.

What may be said for and against the treatment of adult cases, it being understood that some permanent retaining method is required? (Cont'd.)

Dr. Ellis:

Only in selected cases is it justified. Orthodontic treatment has been available for so many years that usually the causes that have prevented treatment during childhood would still be factors that would militate against satisfactory results in adult life. Also the tissue changes incident to treatment and retention are not so readily or successfully brought about in adult cases.

Dr. John R. McCoy:

Only where the malocclusion is quite disfiguring or where one's livelihood is dependent upon one's comely appearance (stage or screen) do I believe in treatment of adult cases.

Dr. Mann:

Treatment is probably indicated, each individual case being considered with reference to circumstances governing the case.

Dr. Chapman:

These should be undertaken only exceptionally and when the patient appreciates the disadvantages of late treatment.

Dr. Mershon:

I treat a good many adults, meaning past eighteen years, with very gratifying results and without permanent retention excepting where I have worked in conjunction with a prosthetic man.

Dr. Hawley:

Treatment of adult cases is all right if you understand the limitations.

Dr. Eby:

I can only say that I have a personal aversion to adult cases and give them an opportunity to go elsewhere. I am painfully frank and only tackle such work when I believe firmly that in the individual case orthodontia has something worth while to offer either from a preventive or corrective viewpoint.

Dr. Lourie:

If patient understands limitations of treatment and possible danger, the results are likely to be gratifying to both patient and orthodontist.

Dr. Suggett:

It is perfectly possible to treat adult cases with good results. It is entirely up to the patient to decide if he would value the results enough to put up with some mild form of retainer indefinitely. I have a patient who had a maxillary lateral extracted with the result of a collapse of both arches. The correction has resulted in such wonderful improvement in her whole face that she says she would willingly wear a Hawley plate at night indefinitely.

Dr. Barnes:

Treatment of adults is generally not advisable. Too many conflicts with appointments. A few cases need a *limited* treatment so much that this should be given if hearty cooperation is assured. Patients fourteen years and over are almost as unsatisfactory as adults.

Dr. Waugh:

Very much is possible in adult cases, and treatment is the duty of the orthodontist. Removable retainers are a great boon to this part of our work.

Dr. Lischer:

The number of adult cases requiring permanent postoperative maintenance is not very large, because the total number of adult patients accepting treatment is, comparatively, small. Extensive mechanisms should not be considered permissible, unless they are of the removable type.

What may be said for and against the treatment of adult cases, it being understood that some permanent retaining method is required? (Cont'd.)

Dr. Crosby:

Treatment for adults is more painful. Unless they are very much in earnest their complaint of the discomfort while wearing appliances is likely to do your practice more harm than good.

Dr. Howard:

I have never seen a case of this type which I thought justified the *effort*. I flatly refuse such cases.

8. **What may be said of the lack of cooperation of patient or parents as a limiting factor?**

Dr. Rogers:

Lack of cooperation of the parents or patient is perhaps more often the cause of failure in orthodontic treatment than any other single factor. Unless such parent or patient can be reeducated and given an appreciation of what the operation really means to the patient it would be better in such cases to terminate the relationship.

Dr. Lockett:

You must have cooperation to get and give the best results in the interest of the parent and the patient, and if you do not get it all three parties suffer.

Dr. James D. McCoy:

I am inclined to believe that noncooperating patients are the most frequent cause of orthodontic failures. Where this characteristic is unmistakably manifested orthodontic treatment is contraindicated.

Dr. Pullen:

Lack of cooperation of patient or parents is a direct cause of failure in obtaining satisfactory results in some cases.

Dr. Abell:

If I knew at the beginning of a case I should *not* have cooperation of patient and parents I would *never* start it. Life is too short.

Dr. Kelsey:

A lack of cooperation makes the best results impossible, and if carried far enough prevents any results at all. A persistent lack of cooperation has caused me to discontinue the treatment of a few cases.

Dr. Morehouse:

Cooperation of patient and parent is of utmost importance, but this usually can be obtained.

Dr. Ellis:

Full and hearty cooperation is necessary. Otherwise partial or complete failure will be the result. If all efforts to gain the most necessary cooperation fail the case should be dismissed, which resultant would serve the best interests of both orthodontist and patient.

Dr. John R. McCoy:

I believe that cooperation of both patient and parent is essential in the accomplishment of the best results, but of course it is possible in some cases to get results without this cooperation. The busy orthodontist who wishes to enjoy his practice should dismiss these cases as such harsh treatment may cause these same patients and parents to cooperate later with another orthodontist.

Dr. Mann:

Cooperation of parents and patient is essential and lack of it must be considered a limiting factor.

What may be said of the lack of cooperation of patient or parents as a limiting factor? (Cont'd.)

Dr. Chapman:

Lack of cooperation shows indifference, from which I draw the inference that treatment had better be abandoned, or confined to a short and simple treatment, which the orthodontist may reasonably hope to complete.

Dr. Mershon:

Without the cooperation of parent and patient your case is a failure before you start.

Dr. Hawley:

It excludes them.

Dr. Eby:

A great deal may be said on the subject of lack of cooperation. It is better to quit, *always*. Independence of a certain kind, the absence of temporizing and expeditious procedure are too important factors to be over-run by willful indulgence.

Dr. Lourie:

Cooperation of all concerned is always necessary for best results and in some cases little can be accomplished without it.

Dr. Suggett:

If patients will not cooperate, then it is hopeless *At This Time*, but it does not mean that the noncooperating patient of today will not be satisfactory in six months or perhaps a year. There must be cooperation to get results.

Dr. Barnes:

It is unwise to treat any case without cooperation of both patient and parent*s* (note the plural). School cooperation is very necessary also.

Dr. Waugh:

Good cooperation is a prerequisite, and unless it is given, it is understood in my practice that I may discontinue my efforts.

Dr. Lischer:

My office records prove conclusively that good results and hearty cooperation on the part of parents and patients go hand in hand. The beginner should plan a routine of procedure which leads to a cordial working together. It is extremely difficult for a busy practitioner to inaugurate such a routine after the burden of his practice becomes established.

Dr. Crosby:

When there is such lack of cooperation one should drop the case if he has the courage.

Dr. Howard:

Everything from *damn* right on through the total vocabulary of profanity, then dismiss the case.

9. **What special qualifications are requisite in the orthodontist himself before he undertakes treatment of these advanced cases?**

Dr. Rogers:

Without attempting to specify all the qualifications necessary for a successful orthodontist, I will name a few that I consider of extreme value. First, an insight into human nature, particularly that of children. Second, a certain fondness for children which is conditioned upon an inherent determination to help them whenever possible. Mental equipment which is not easily discouraged and which is analytical in nature, and above all things honest. That service and not financial success shall be his underlying motive. He must have technical ability and be sufficiently acquainted with the collateral sciences to comprehend his field as a science worthy of his finest efforts.

What special qualifications are requisite in the orthodontist himself before he undertakes treatment of these advanced cases? (Cont'd.)

Dr. Lockett:

I think the most important special qualification requisite before a man becomes a practicing orthodontist is to be a general practitioner of dentistry first. As a general practitioner practicing orthodontia, most of my life has been spent in discovering how little anybody knows about treatment of cases which will give the patient a permanent result in adult life, and until we can give this security of success to our patients we deserve all that comes to us in this world and the next!

Dr. James D. McCoy:

To my mind the qualifications of an orthodontist whether he handles adult cases or cares only for the mouths of young children would be the same.

Dr. Pullen:

The orthodontist should have as his best qualification experience in somewhat similar cases. Lacking this he should not experiment, but seek the advice of an orthodontist of greater experience who has cultivated an assured judgment in regard to the cases of advanced age which cannot fail to be of value to others of lesser experience.

Dr. Ketcham:

Knowledge, skill, experience in treating simpler types of cases.

Dr. Abell:

He should "know his onions."

Dr. Kelsey:

Patience and perseverance, but chiefly he should be a good orthodontist.

Dr. Morehouse:

The same qualifications are requisite as for other cases. If he is to be a success, honesty with his patients as to the prognosis and patience to stay with the case to the end, likewise foresight as to the results he can give.

Dr. Ellis:

The same qualities are requisite as for the successful treatment of any and all orthodontic cases: education, love and enthusiasm for his specialty, experience and the complete understanding of all the necessary factors in etiology, development, growth, the tissue changes incident to and following orthodontic stimulation, together with other requisites too numerous to mention, and particularly good judgment and common sense.

Dr. John R. McCoy:

Unlimited patience, ingenuity, strong personality and a knack for detail.

Dr. Mann:

Much may be said of that!

Dr. Chapman:

He needs a knowledge of the changes, physiologic and pathologic which are likely to occur as a result of increasing age and be able to judge to what extent he is accelerating those processes as a result both of tooth movement and retention. This knowledge is probably best obtained in the practice of general dentistry and orthodontics combined.

Dr. Mershon:

I am afraid to answer this question because it would disqualify me!

What special qualifications are requisite in the orthodontist himself before he undertakes treatment of these advanced cases? (Cont'd.)

Dr. Hawley:

He must be an orthodontist in fact!

Dr. Eby:

Knowledge, background, vision, experience, including an intimate knowledge of all biologic and morphologic facts producing a state of normal in the maxillofacial tissues.

All disturbances of any nature which make against the existence of normal in the same area.

A perfect insight into the laws of growth and development and the vital behavior of the teeth and overlying tissues.

Sufficient depth of knowledge to apprehend the correct positions of teeth, and the adoption of such methods of treatment prescribed by known facts which will assist nature in the simplest effective manner to the accomplishment of her own inherent desires.

To have knowledge enough to know what to do.

To have knowledge enough to know what not to do.

To yield to no empirical mandates.

To realize that he is working on a fellow human being.

To realize the vast depth of orthodontia as a prescribed therapy and that it is not a patent medicine.

Dr. Lourie:

Sympathy, and confidence that something worth while may be accomplished.

Dr. Suggett:

That is a hard question. I do not think it necessarily requires any unusual skill. It is the mental attitude. I like to "putter" with such cases. It interests me. I keep careful records and I think I can show there are no impossible cases. They may not result in 100 per cent, but they will be improved 25 per cent, 50 per cent and 75 per cent.

Dr. Barnes:

If this includes all cases, the answer is:

The orthodontist must first be a clean man of professional tendencies rather than commercial. He should have had some technical training before the dental or orthodontic. He should have an acute sense of form. He should be sympathetic. He must have the interest of his patients at heart and realize that a proper financial return is only the reward for conscientious treatment given, not the main objective of that treatment.

Dr. Waugh:

A comprehensive grasp of physiologic function of the oral cavity, based on knowledge, skill and judgment.

Dr. Lischer:

The successful conduct of a general practice for at least five years is probably the best training for an orthodontist. The responsibilities incurred in trying to keep a mouth well when the "fates" seem to decree otherwise will provide him with qualifications which are indispensable.

Dr. Crosby:

He should have had some experience in general dentistry before taking up orthodontia and be sure that he is working with a practitioner who has the vision and ability to make a practical retention unless the orthodontist is to do the work himself.

10. **Please name any other types of malocclusion we ought not to treat, adding any comments you desire to make.**

Dr. Pullen:

It seems reasonable to suggest that severe adult malocclusions of the distoclusion types with deep underbites, extracted lower first molars, and especially those in which heredity may be assumed to be a strong causative factor, might better be left untreated, or referred to the prosthetist and oral surgeon. Also, cases of children or adults who are suffering from the ravages of tuberculosis or other debilitating or chronic disease should not be subjected to even the slight strain of treatment.

Dr. Abell:

I always hesitate to begin pronounced open-bite cases, unless, of course, it was caused by some habit of lip or tongue, etc., that a strong-willed patient would give promise of overcoming.

Dr. Kelsey:

I know of no type of malocclusion that we should not treat, though there may be individual cases belonging to any type in which for one reason or another treatment in contraindicated.

Dr. Morehouse:

In cases where radiograms indicate short roots or where absorption has started on the roots, I do not advocate treatment.

Dr. John R. McCoy:

I think that before treating each and every case of malocclusion the orthodontist should put this question to himself: "Will this child be benefited materially by orthodontic interference?"

Dr. Mann:

In my opinion all circumstances which may influence the judgment of the operator must be given careful consideration in determining what cases should or should not be treated.

Dr. Chapman:

Certain other types of malocclusion we ought not to treat are:

a. Cases in which the error is slight.

b. In hospital practice in this country (England) long orthodontic cases are not practicable in many of the cases—parents cannot afford the time or money for it.

c. A small proportion of cases so severe (e.g. Class II, Div. 1 and Class III) that they may be classed as marked facial deformities, as well as orthodontic deformities, which offer little hope of improvement unless treated *early*.

Dr. Eby:

Treatment contraindicated:

Not before age of eruption of six year molars unless under very urgent conditions.

Many cases from seven to ten where nature could be given the benefit of the doubt.

Most cases begun after the absorption of roots of deciduous molars, from nine to eleven plus.

Few cases ever indicated from ten to twelve when roots of deciduous molars and canines are absorbed or being lost.

No advanced adult cases of the routine variety unless the preventive value of serious impending disaster or a strong predisposition toward self-retention will justify the effort.

Dr. Lourie:

Excessive development of jaws or processes is the only type in which I have advised against orthodontic treatment, though in many cases I explain its limitations.

Please name any other types of malocclusion we ought not to treat, adding any commets you desire to make. (Cont'd.)

Dr. Suggett:

The only cases I can think of would be where caries are rampant.

There have been a great many sweeping assertions made offhand of what can or what cannot be done in orthodontics. These often emanate from laziness or lack of interest in doing a difficult thing. If a man is interested in his art the difficult things should be the ones that fascinate him.

Dr. Barnes:

Extreme maxillary deficiencies, mandibular deficiencies, open-bites and overbites all contraindicate really successful orthodontic treatment. We may improve these cases somewhat but the results do not even approximate the ideal and patients should be informed of this before treatment starts at all. Cases in which an exceptional number of permanent teeth are missing should be given only limited treatment to lessen the evil and permit better prosthetic substitutes.

A general condition of tooth decay is a condition in which it is unwise to start or continue any extensive orthodontic treatment.

Patients eating chiefly white bread, meat, potatoes, rice, peas, beans, and excessive sweets do not respond well to treatment.

Dr. Lischer:

The vast majority who seek orthodontic service are of an age when mixed dentures are the rule, that is, nine years, or less. Unless extreme deformity presents or is impending, the operator should weigh all factors very carefully and ask himself the questions: If I observe this case for six or twelve months may it not be possible to avoid treatment; or at least reduce the time required very materially?

DISCUSSION

Dr. James David McCoy.—Our essayist has brought to our attention one of the most important subjects which faces our specialty. Any statement that some cases of malocclusion teeth should not be subjected to treatment will doubtless be received by the layman, by dentists in general, and by some inexperienced orthodontists, with great surprise. Such an idea stands in such striking contrast with the popular conception of orthodontic possibilities and requirements that in many quarters the viewpoint will doubtless be questioned. The old idea that orthodontic treatment is largely a mechanical process whereby teeth may be moved into correct occlusion provided appliances are operated with reasonable skill, and if held there long enough through a period of so-called retention, will become fixed in the new relationship, is all too prevalent even today. Furthermore, this misconception is being constantly contributed to by some manufacturers of appliances and by laboratories catering to the general practitioner so that no immediate relief from the situation seems imminent.

If the orthodontic problem were the simple thing we considered it twenty years ago, it is doubtful whether our essayist would ever have felt called upon to make this contribution. Perhaps it has required a good part of these years to bring many of us to a realization of our limitations in so far as our specialty is concerned. The mere fact that we do realize these limitations is perhaps the healthiest symptom we could have for it cannot but act as a stimulus toward continued effort which will lead to brighter developments in the future. It was only a comparatively few years ago that orthodontists in general were reasonably satisfied with what was acclaimed to be a reasonable explanation of the causes of malocclusion. Today, however, we freely admit that aside from certain generalized classifications in which we include for purposes of description (a) predisposing and (b) determining causes in which unknown factors participate, we have not traveled far enough in this particular field to be exultant over our accomplishments. We know that frequently there is no definite dividing line between these two groups of causes for they may merge in some instances to the extent that they cannot be differentiated.

Even if we feel that predisposing causes form a class quite distinct from determining causes and that in the majority of instances the parts affected have first been subjected to them, thereby making them vulnerable to the effect of determining causes we cannot yet with reasonable accuracy tell when their influence has terminated.

In viewing the prognosis of orthodontic treatment in its relationship to this one phase of the subject, we are brought to realize how complex a problem we face, even in our simpler cases. If the experience of passing years is to prove helpful to us all in the highest possible degree, it will be necessary to duplicate just such helpful efforts as that which Dr. Gray has inaugurated with this paper. As the one who is privileged to open the discussion of it I have, of course, seen the manuscript in advance and have been privileged to read the questionnaire and the responses made to it by some of our most representative practitioners. While the essayist may incorporate some of the material gained by this cooperative effort in his further discussion it will be quite impossible for him to give it all to you because of limited time. At the time the paper is published, however, these answers can all be read with profit.

Dr. Gray has outlined ten very pertinent and practical questions pertaining to orthodontic practice. Each of us meet some of them very frequently and must make decisions. We might all individually differ as to the importance of these questions but perhaps the one which we are called upon most frequently to meet is the first—namely, "Age as a limiting factor so far as it relates to early childhood; that is, from three to six years of age." Within the memory of many of us the idea was promulgated that orthodontic treatment should not be undertaken until all of the permanent teeth, with the exception of the third molars, had erupted. From this viewpoint we then saw the pendulum swing to the other extreme—namely, that treatment should be instituted at the earliest manifestation of malocclusion even if the deciduous teeth only were present. Great stress was laid upon the so-called advantages to be gained through orthodontic intervention at this period and literally hundreds of children were subjected to such treatment. The logic of such practice when applied to all cases proved disappointing as was evident by a protest voiced in 1914 by Dr. Kemple who read a paper before this organization entitled "A Consideration of the Early Treatment of Malocclusion" in which he protested this viewpoint and pled for a saner consideration of the problem. So deeply rooted had the idea become that a veritable storm of protest was voiced by many practitioners against his stand. It is interesting to note the final conclusion of his paper which reads as follows: "I am firmly convinced that a large percentage of the treatment of cases of so-called malocclusion in the mouths of young children is entirely unnecessary and that in many of these cases nature would and could do the work far better than any orthodontist could possibly do it."

I believe the sanity of this conclusion has been growing since that day and that experience has brought us to a more rational viewpoint which is not represented by either of the two extremes which have been designated as most advantageous for treatment. Personally, I feel that to place appliances upon deciduous teeth simply because developmental spaces are not apparent at the time they supposedly should appear is decidedly questionable practice. Even in cases at this early age where malocclusion is present I am inclined to think that unless it is very extreme, orthodontic interference is not justified. In many instances coming under my observation including mild distoclusion cases as well as those representing the opposite condition, viz., where the upper deciduous incisors close in a lingual relationship to the lower incisors, I have seen self-correction take place at the time of eruption of the first permanent molar and the permanent incisors.

My present plan, therefore, is to keep such cases under frequent observation, seeing them twice a year or more frequently if necessary and as long as any improvement is apparent I let them alone. In those deciduous cases where the deformation is so marked that a functioning of the parts is seriously interfered with, I believe that we are justified in placing appliances and moving the teeth. Only once during the last five years have I felt impelled to do this and in that instance the case was characterized by all of the lower teeth completely telescoping the uppers so that mastication not only with the lower molars but also with the incisors was against the oral mucus membrane. This was a

congenital condition and when the child was brought to me at the age of four I felt impelled to place the teeth in occlusion and did so. I feel quite certain, however, subsequent orthodontic treatment will also be necessary.

The scope of Dr. Gray's paper is such that a discussion of all its important considerations by one man is out of the question. I will, therefore, not attempt to go further into the questions nor discuss the data accumulated by the questionnaire but rather recommend this for your earnest consideration and study at the time of publication.

Dr. V. E. Barnes.—Possibly I have been responsible for as much of the idea of the growth spaces necessary for proper development as any one. I want to say to Dr. McCoy and anyone who claims those growth spaces are not necessary, take your casts, watch your cases, and measure and chart your casts, and I think you will change your opinion; I had to change mine. I took casts at intervals of six months and a year, measured them and found in many of them the arches were narrower or no wider than they had been before.

What are the growth spaces for anyhow? They are a provision of proper bone development to let the permanent teeth develop without stress and without lateral contact as they erupt. Any other development is abnormal. I will stand on that; disprove it if you can. No one has yet shown proof to the contrary. If you will chart your teeth, chart your arches and study normals as I have been doing, and as Stanton is doing—he knows the shape of the arches—you have got to come to some different conclusion as to the size and form of the arches in the normal than you have now.

If you have no spaces in these deciduous dentures, you have stress eruptions. They are the minor phases of impactions. I regret there was no opportunity to study this paper and present a written discussion. I assure you that in the future I will have some casts that will show you some of these things, and I will be glad to meet opposition.

Dr. Samuel J. Lewis.—I would like to ask Dr. Barnes at what ages he took the casts, where he found the growth spaces necessary and the changes?

Dr. V. E. Barnes.—Some of them were three, four, five years, and up.

Dr. Samuel J. Lewis.—Do I understand you found the width changing in these arches?

Dr. V. E. Barnes.—I did.

Dr. Samuel J. Lewis.—This is a very vital question to me because in the last three years Dr. Ira Lehman and I have been observing a group of children in Detroit at the Merrill-Palmer School with a view of finding out what happens to their dental arches. These children range in age from three to five years, and while under observation are not under orthodontic treatment. It is proposed that we continue this study for a period of at least ten years, accumulating a record of models and anthropometric measurements. We have now finished our third year of study, and while our observations show, or rather prove to us at least, that there is very little width change in the dental arch between the ages of three and five, yet we have not arrived at any definite conclusions about anything concerning growth and development. We are not concerned at the present time with the question of whether or not we should treat early, but we are concerned with the question of what takes place in the dental arches during early and late childhood. I do not agree with Dr. Barnes when he says that these width changes take place in the deciduous arch. They do at times, but they are not necessary for normal development in every case.

Judging from the evidence we have at hand, there has been practically no change in the width of the dental arches between the ages of two and a half to five and a half years. Where we are going to end I do not know, but so far our observations have not agreed with those of Dr. Barnes. We are not ready as yet to present our work, but we have not seen these width spaces so far, and certainly some of our 200 children are going to develop normal dental arches.

Dr. V. E. Barnes.—Wait and see them.

Dr. Ralph Waldron, Newark, N. J.—I was very much surprised some years ago at a statement made by the late Dr. E. A. Bogue, wherein he stated that in normally de-

veloped dental arches, he had found practically no difference in the widths of the deciduous arches, and those of their permanent successors.

In other words the width of the deciduous arches measured at the second deciduous molar area was, at the age of five years, as large as the permanent arches measured at the second premolar area at adult age.

This statement was so startling to me that I selected twelve children whose dentures seemed to be as near normal as possible and I took impressions at four and five years and at thirteen years. I could only take impressions on six as I could not find any more at that age and one of these two was my daughter whose impressions I now have at the age of three, four, five, thirteen and sixteen years.

The average widths of these teeth at various ages were as follows:

	Canine Width	*Deciduous Molar Width*
At 3 years	31½ mm.	45 mm.
At 4 years	33 mm.	46 mm.
At 5 years	33 mm.	46 mm.
At 13 years	35 mm.	46 mm. Per. premolar

These findings will almost bear out the statement of Dr. Lewis and they practically agree with those made years ago by Dr. Bogue.

Dr. Samuel J. Lewis.—I think this matter is germane to the subject. So far as growth and development are concerned, I can say that we know very little about it. It does not matter what Dr. Barnes says, what I say, or what Bogue or any one else says. Tangible evidence is what counts. I for one was a follower of Bogue in 1912, but I am not any more. In our study at the Merrill-Palmer school we are concerned with Bogue's norm. We do not know whether Bogue's norm is right or wrong, but we are putting it to the acid test of science. We are tabulating every case in our collection, and once a year we are measuring the width between the upper second deciduous molars on the palatal portion, the same as Bogue did. We are tabulating by age each individual case, and at the end of ten years we hope to be able to show the changes that have taken place. We can test Bogue's theory beautifully because unlike his cases, none of ours will be under treatment, and further we will have successive models of all these cases made from plaster impressions. In this way we will be able to find out how many of our cases below the 28 millimeter norm of Bogue have developed into normal occlusion, and how many into malocclusion: also how many over the 28 millimeter norm have developed into normal or malocclusion. That is the only way we can test out these theories. It takes time, but when we have the evidence it won't be a matter of taking things for granted: the proof will be there for any one to see. We are going to be able, at least, to tell you something about the particular group we are studying. Until then, or until someone else does this type of work, I do not think we have any right to say this or that takes place; we just do not know for sure. The literature does not contain any proof of these things to date, and I have just recently gone over an accumulation of the last twenty-five years.

Dr. L. M. Waugh.—I view it from two aspects, the developmental and the practical. I said yesterday that scientific facts, those found as a result of research, are valuable to us only in so far as we can use them in practice.

I shall speak for just a minute on the embryologic side, and then on the practical side. First, the embryologic side is this: that when the tooth erupts its crown is as large even before the time the cusp peeps through the gum as it ever will be. The permanent teeth are larger than the deciduous teeth. If teeth do not have sufficient jaw area to come properly into place, naturally one of three things must occur. They must come in (a) out of alignment, (b) they must be rotated or (c) temporarily retarded in this eruption.

The deciduous incisors are smaller than the permanent incisors. The urge that causes the development of the jaw is the growth of the tooth follicles, principally. If the space

between the cuspids does not occur just prior to the period at which the permanent successors shall erupt, then there is not sufficient jaw area for the accommodation of the permanent tooth. That is embryologically correct and physically correct.

With regard to the development we expect to see in our practice and from observation, I did not agree with Dr. Bogue twelve years ago. I partly agree with him now, and think his theory is correct but not always applicable.

We know the bony development in one child is two or three years beyond that of some other child—that is taking the physiologic age of six. If the physiologic age of six shows no spacing of the deciduous incisors, I believe that that is the time to begin the development of jaw area between the cuspids, the intercuspid space being increased so there shall be space for the incisors.

I believe with Dr. McCoy that a careful checking up is necessary. When I have a patient come to me in which the deciduous teeth themselves, the incisors, are either rotated or not in nice alignment, and the general physical condition shows retardation in bony development, I believe it is sometimes wise to place a simple appliance, a lingual arch with two little auxiliary springs, not at five years of age but at six or six and one-half.

When patients come at four and four and one-half and there is threatened undevelopment, we make radiograms and casts, sometimes photographs. Those are watched, and if there is no indication of development when that child has reached six, I believe it is a sound principle for treatment, that we should aid in our treatment by doing what nature wanted to do, but for some reason was unable to have done. Our incisors are coming in out of the line of the curve of the arch, or rotated, or will be temporarily retarded in their eruption.

Dr. B. Frank Gray.—I enjoyed Dr. McCoy's discussion very much as I did the points brought out by the other gentlemen. While the discussion seems to have revolved about the point of one question, the very early treatment of children, I am glad we apparently have got somewhere toward clearing up the matter a little more definitely.

I noted Dr. Barnes' and Dr. Lewis' little difference of opinion, which is all helpful in the end. Dr. Waugh's view, I think, is a very, very sane one. It strikes me as being an important discussion of this particular question. My own feeling has been that possibly many of us, not only the younger orthodontists, but some of the older ones, were floundering about trying to treat unnecessarily the very, very young dentures. I think the view as Dr. Waugh has given it to us is one that we will all do well to keep in mind.

This brings me to the concluding thought I will present, and that is we have great need, I think, for research problems being worked out not alone along those difficult lines like endocrinology, but in some of the practical everyday questions, such as those that were discussed, and those that were referred to in the paper. I believe they will all be helpful. Thank you.

PRESIDENT'S ADDRESS BEFORE THE SOUTHERN SOCIETY OF ORTHODONTISTS*

By Harry A. Holder, D.D.S., Nashville, Tenn.

IT HAS been the custom to reserve a certain amount of time at the opening session of this Society for the president to present an address upon some subject that he may deem appropriate.

When the Board of Censors met to arrange the program for this meeting, they found that more papers had been secured than could be given in the time at their disposal. The question then arose of eliminating one of the papers. It did not appear to be the proper or courteous thing to do, after having invited the essayists to prepare their papers and after they had spent considerable work upon them, to notify one of them that his paper could not be used, so I suggested that the time which had been allotted to the president's address be utilized in the presentation of one of these papers, and in that way two essays could be placed upon the program for this morning instead of one.

The Board of Censors very kindly agreed to this arrangement, and I am therefore going to use only enough time to offer one suggestion which I think the Society should consider and act upon.

For several years there has been some discussion in our Society as to whether members of the profession living outside the Southern territory should be admitted to membership. There have never been many men outside our territory to apply for membership, but a few from other sections have attended our meetings regularly, and have expressed their desire to join the Society, and assume their share of the obligations. Some of the Southern members have taken the position that the membership should be limited to men in the Southern territory.

The by-laws do not cover this subject and in view of the discussion that has arisen in the past, I think the Society should go on record in this matter.

Personally, I am of the opinion that the Southern Society of Orthodontists, being a scientific body, should welcome into its ranks any member of the profession who can pass the necessary qualifications, regardless of his place of residence.

My idea of a Southern Society (and I think this was the idea in the minds of most of the men who participated in its organization) is a Society that will always hold its meetings in the Southern territory, where the members will not have to travel long distances to attend the meetings, but a Society which, if by the character of its programs and the personnel of its membership, causes men from other parts of the country to apply for membership, should feel it a compliment that these applications have been re-

*Read before Southern Society of Orthodontists, Asheville, N. C., 1927.

ceived, and should welcome all worthy applicants. I, therefore, recommend that an article be incorporated in the by-laws, making our position clear in this matter.

I cannot let this opportunity go by without expressing publicly, as I have already done privately, my thanks to those officers of the Society who have rendered such valuable assistance during my administration. I want to express my appreciation especially to the members of the Board of Censors, whose untiring efforts and hard work have done much to make this meeting the success I confidently hope and expect it to be.

I also want to express my thanks to the essayists and clinicians who are to appear upon our program. Some of them have traveled long distances to be with us, and on behalf of the Society, I thank you for your presence, and hope your visit among us will be very pleasant. I hope our discussions will be as full as the time will allow. I feel that in a scientific body one of the chief values of the meeting is the discussions. We do not all have the same ideas about the subjects presented, but we can make our meetings a clearing-house, and no one who has the true scientific spirit should object to discussions or constructive criticism of his methods by those who hold contrary views.

Let me call your special attention to the topic discussion or round-table which will be held this evening. This is the first time this method has been tried in our Society, but I hope it will prove so interesting and valuable that it will be made a part of our program each year.

The large amount of material presented this year necessitates the prompt opening of our sessions, and I ask your cooperation in this to the end that our program may be kept as nearly up to the scheduled time as possible.

Chicago Dental Society

The Annual Midwinter Meeting and Clinic of the Chicago Dental Society will be held at the Drake Hotel, Chicago, January 24, 25, 26, 1928. Dr. Arthur D. Black is chairman of the Program Committee.

All members of the American Dental Association are cordially invited to attend this meeting.

RELATION OF PEDIATRICS TO ORTHODONTICS*

By Lewis W. Elias, M.D., Asheville, N. C.

PEDIATRISTS are closer to orthodontists in at least one point than they are to the general dentist in that the orthodontist's work is confined largely to children. While doctors and dentists alike are engaged in trying to cure diseased conditions in the human body, they both go a step further and are trying to achieve a nobler ambition, namely: the prevention of these diseases.

Since this paper can add nothing at all in correcting orthodontic conditions, it will be limited to a brief consideration of preventive measures from the pediatric standpoint. With this in mind what shall we attempt to prevent? To know this we must consider the diseases which affect children's teeth.

The factors back of orthodontic conditions are numerous and various. Many we probably do not know, and many more we have only partly guessed. Heredity is one. But this we can affect so slowly that it seems almost hopeless at present. But there are others that we do know about and can help, such as thumb-sucking, contagious and other diseases, malnutrition, adenoids, rickets, and a host of others that more or less affect the teeth, which can and must be corrected, if one does his duty as a modern orthodontist. Let us consider a few points in regard to preventing the troubles enumerated.

Thumb-sucking can be prevented by calling the mother's attention to the importance of the habit. Feeding the baby more food, if the thumb-sucking is due to hunger, and this is often a part of the causative picture. Once the habit is formed, it is to be cured by any of the simple measures that constantly prevent its repetition, such as splints on the arms, metal balls on the hand, silver chains on the thumbs or small rubber tubing fastened on with adhesive, and such outfits.

There is an ever-increasing number of contagious diseases which can be controlled. Smallpox is entirely preventable, diphtheria also, by the use of toxin-antitoxin, and this should be given all children, as there are still from one hundred fifty to two hundred thousand cases in the United States yearly. A slogan has gone abroad which all should champion; namely, "No diphtheria by 1930." This is entirely possible. Scarlet fever can usually be prevented after known exposure as well as greatly relieved after it develops. Typhoid is largely prevented by vaccination. Hope is dawning that measles may soon come under control.

While as yet we can do little to control such diseases as influenza, pneumonia, and other severe illnesses, much can be done to counteract their after-effects. This will be mentioned later.

As regards malnutrition, in most cases, much can be done. Here, the first thing necessary is education. If the proper attitude is developed in the

*Read before the Southern Society of Orthodontists, Asheville, N. C., February 20, March 1 and 2, 1927.

public, such cases will be watched for and checked in the beginning. A very simple test that all may apply is to weigh and measure the children at least monthly and compare this data with the age. This is easy, and is universally applicable, and when mothers understand the importance of applying the test, we will have taken a long step forward.

Not only do adenoids cause malformation of the nose, roof of mouth, and dental arch with malocclusion, but the presence of adenoids predisposes to frequent, sometimes almost continuous, colds which further intensify the deforming effects of adenoids. This will be ably described by Dr. Briggs tomorrow. Adenoids, with enlarged and diseased tonsils, increase the chances of contracting the contagious diseases of childhood with their baneful effects.

Dental caries is too common a cause to mention except to say that you know the importance and the preventive measures of this better than anyone else in the world. One point, however, I will emphasize later.

Rickets predisposes to respiratory diseases of chest and nose as well as to adenoids, anemia, etc., and so, both directly and indirectly help to produce dental pathology. The deciduous teeth in rickets are usually good, being formed before birth, and so, before the advent of rickets, but the second set are frequently defective in dentine, as would be expected when influenced by a disease that develops between the sixth and the eighteenth month.

Calcium metabolism is affected more or less by all the conditions mentioned—by rickets especially, but largely also by contagious diseases or any serious disorder as well as pyogenic infection, or in fact any overload which tends to reduce the calcium level in the blood and so causes the blood to filch calcium from the bones and teeth.

We now come to a consideration of a cause back of so many orthodontic conditions; namely, imperfect calcium metabolism. Here I wish to suggest a factor that I think will assume large proportions in the near future, even rivaling food. What I am giving now is theory, arrived at by inference, rather than by direct proof. Work is in progress along this line, but as yet no data are available. However, the theory, if carried out, is not only harmless but extremely beneficial to all children, in many directions; and it seems plausible that it should prove very valuable from an orthodontic standpoint.

It is a well-known fact that sunshine assists powerfully in metabolizing calcium. Sunshine, by increasing the appetite and body metabolism, assists in the extraction of calcium from the food and so supplies the bones and teeth with the necessary calcium for growth, and by the same process, maintains the necessary blood calcium level. For this reason it is a specific in rickets. It aids the body in restoring the calcium balance, which is usually lowered by most of the severe diseases. Hence, heliotherapy or sun baths, that is, exposing the nude body in a graded and guarded manner to the direct rays of the sun, either in the course of disease, or during convalescence enables the blood more speedily to reach its normal calcium level, and so checks the damage to the developing teeth which otherwise would show defective formation due to lack of lime salt. Since dental caries in the deciduous teeth may lower the calcium content of the blood and so help to produce a defective set of permanent teeth, we have another reason for the

care of the baby teeth and the early teeth of the permanent set. Heliotherapy helps to put a double check on any lapse in this direction by holding up the calcium level in the blood.

Without becoming tedious along this line—to me a tempting line—I will simply throw out this question for consideration: With the well-known powerful effect of sunlight on the body in raising and maintaining the calcium metabolism and calcium blood content, may we not be overlooking one of the most valuable adjuncts in forming perfect teeth if we fail to urge the widespread use of heliotherapy in babies and growing children? A limited experience in the use of heliotherapy makes me feel that we are.

A NEW FORM OF LINGUAL LOCK-WIRE

By Victor Lay, D.D.S., Buffalo, N. Y.

THE usual method of forming a lingual lock-wire, is by soldering it to the alignment wire, about one-fourth inch from the tube on the molar band; the wire extends down a short distance, and is then turned at right angle to pass under the tube, thus preventing the lingual alignment wire from being displaced.

The disadvantage of this form has been that the lock-wire is soft at the junction with the main wire, thus allowing it to be frequently forced downward or lingually by the stress of mastication, thus resulting in the displacement of the main alignment wire.

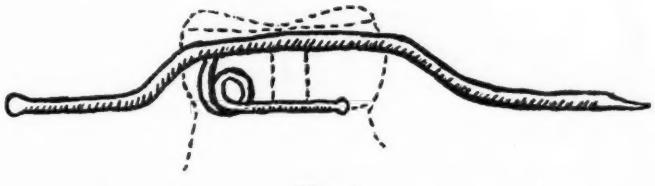


Fig. 1.

In my experience, a decided advantage in the direction of stability has been secured by the following method. The lock-wire, after being soldered to the alignment wire, is formed into a coiled spring, with sharp round-nosed pliers (Waldron's pliers have worked well) after which the wire passes forward under the tube. The procedure is about the same as coiling auxiliary springs to restore temper.

The result is a wire having high spring tension and resistance to masticatory and food-stress, as well as the strain of frequent manipulation. At the same time, it is very easily loosened at will, with a scaler, or other suitable instrument.

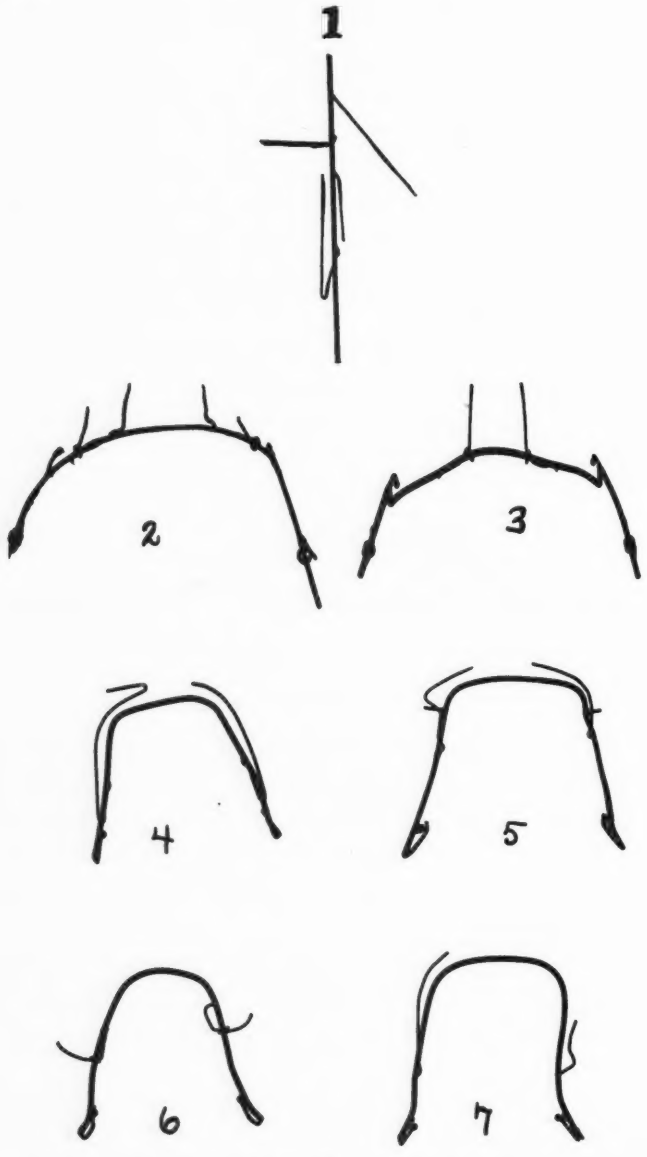
The wire used for this purpose is 22 gauge, 20 per cent gold-platinum, with balled end (Fig. 1).

Clinics

AUXILIARY SPRINGS, THEIR CONSTRUCTION AND APPLICATION ON PRACTICAL CASES AS USED WITH LINGUAL AND LABIAL APPLIANCES*

By Dr. P. R. Ashplant, Newburgh, New York

FIG. 1 shows the angle at which the auxiliary spring is soldered to the body wire (at the top); below are the three bends made to complete a recurved spring, 0.020 wire.



*Clinic given before the First International Orthodontic Congress, New York City, August 16-20, 1926.

Fig. 2 shows medium high labial arch with simple auxiliary spring for moving centrals either lingually or buccally. On the laterals are springs wrapped once around the body wire, giving a little more flexibility to the spring, 0.020 wire.

Fig. 3 shows springs used on high labial arch attached on the upper side of arch, then carried mesially five (5) to seven (7) millimeters and wrapped around body wire once. This spring is very flexible and its stimulating action can be controlled to a nicety, 0.020 wire. This spring was first shown me by Dr. Lowrie Porter.

Fig. 4, upper shows the simple recurved spring on one side and the recurved with kicker on the other side, 0.020 wire.

Fig. 5. Maxillary lingual arch shows the simple spring on one side and the simple spring with kicker on the other side with guards attached distal to the canines, 0.020 wire.

Fig. 6. Mandibular lingual arch with two forms of space openers for premolars. On one side the wire is wrapped around the body wire so as to come over the top of the body wire, the other side passes under the body wire. This is a very positive and flexible spring, 0.020 wire.

Fig. 7. Mandibular lingual shows two springs for the buccal movement of premolars where you have the force of occlusion to contend with. These springs are made with 0.022 wire and sometimes when the bite is very heavy we start with 0.025 until the teeth are in occlusion, then replace with 0.020 wire. With the exception of one space opener the springs are all made so as to come under the body wire for protection.

Southern Society of Orthodontists

The annual meeting of the Southern Society of Orthodontists will be held at Hotel Belvedere, Baltimore, Maryland, on April 27 and 28, 1928. A cordial invitation is extended to all ethical members of the dental and allied professions.

Oren A. Oliver, Sec'y.-Treas.,
1101 Medical Arts Bldg.,
Nashville, Tenn.

APPLIANCE USED IN TREATMENT OF CASE OF EXTREME MESIOCLUSION*

By Dr. Winston P. Caine, Chattanooga, Tenn.

THIS is a case of a young lady who was nineteen years of age when the treatment was started (Figs. A and B). She had a case of extreme mesioclusion with small teeth and a missing maxillary premolar on each side. The case which is still under treatment will have been treated three years in December, 1926.

Figs. A-G.

*Clinic given before the First International Orthodontic Congress, New York City, August 16-20, 1926.

The appliance that I have used on the mandibular teeth is designed to obtain intermaxillary anchorage and to prevent tipping the banded molars and to prevent elongating the mandibular incisors. It have a removable lingual appliance and have extended the wire around the second molar with an occlusal rest on this molar from the lingual (Fig. C). Have banded both mandibular first premolars and soldered a wire loop with an eyelet in it, to be tied to the labial wire as shown in Figs. D, E, and F. Have used extra long intermaxillary hooks for intermaxillary rubbers (Figs. E and F).

Fig. A shows the case as it was then started. Fig. G shows the case as it was in April, 1926, when these models were made.

TECHNIC OF TAKING AN IMPRESSION OF A MOLAR TOOTH FOR WHICH AN ORTHODONTIC BAND IS TO BE MADE (CLINIC)*

By Dr. Charles R. Baker, Evanston, Ill.

IMPRESSION compound, which has been softened in water at a temperature of about 130° F., is used in a partial impression tray. The tray is introduced into the mouth and the compound forced around the teeth and soft tissues in the usual manner, until the occlusal surfaces of the teeth are close to the tray.

As soon as this has been done and while the impression material is still soft, the tray should be moved slightly so as to distort the impression, making it larger.

The tray and impression are now quickly removed from the mouth and before the compound hardens the impression should be still further enlarged in the region of the molar tooth. This is done by using the end of the finger or a pellet of wet cotton held in pliers. The impression is now thoroughly chilled.

A small piece of soft impression compound is now placed in the molar region of the distorted impression and the tray is again placed in the mouth and forced back into its original position. Considerable pressure is used in doing this, and the tray is held firmly in place until the second piece of compound has thoroughly hardened.

The chilled, slightly distorted impression acted as a fairly accurate fitting impression tray by means of which it was possible to force a small amount of soft impression material against the molar tooth under considerable pressure, and a very accurate impression may be secured by this method.

Later the impression should be filled with artificial stone, and a band made to fit the model.

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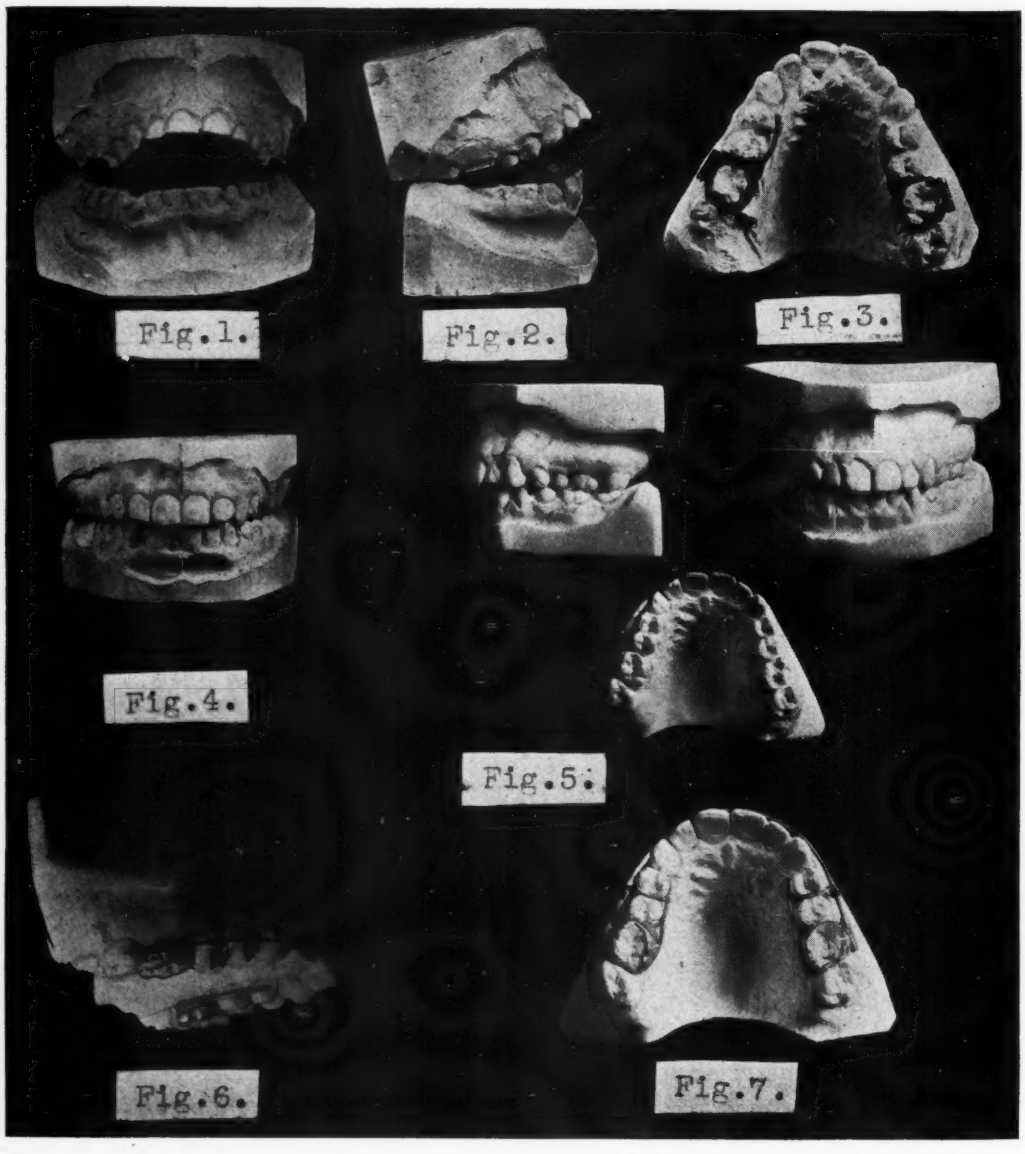
*Clinic given before the First International Orthodontic Congress, New York City, August 16-20, 1926.

A SIMPLE TREATMENT FOR LABIOVERSION OF THE ANTERIOR TEETH AND OPEN BITE CASES (CLINIC)*

By Elizabeth E. Richardson, San Francisco, Calif.

MOLAR bands are placed on the first permanent molars, with buccal tubes and partial lingual wires, extending from the molar bands anteriorly, resting against the first premolars, as shown in Fig. 3.



Adjust an expansion arch to rest against the anterior teeth. Place the nuts opposite the embrasure between the first and second premolars. Wire through the interproximal spaces between the first and second premolars

*Clinic given before the First International Orthodontic Congress, New York City, August 16-20, 1926.

(engaging the expansion arch and the partial lingual wire), allowing the ligature to rest against the nuts mesially, which will exert pressure on the anterior teeth as shown in Figs. 6 and 7.

Expanding the arch in the molar and premolar region will relieve the close contact of the anterior teeth, and the force exerted upon them by the expansion arch causes the teeth to erupt.

Figs. 3, 6, and 7 show the appliances in position.

Figs. 1 and 2 show the case at the beginning of treatment. Fig. 5 shows the case about five years after the removal of retainers.

American Association of Dental Schools

The fifth annual meeting of the American Association of Dental Schools will be held at the Mayflower, Washington, D. C., March 26, 27 and 28, 1928. DeLos L. Hill, Secretary, 1206 Medical Arts Building, Atlanta, Ga.

Montana State Board of Dental Examiners

The next meeting of the Montana State Board of Dental Examiners will be held January 9-13, 1928, at Helena. For further information address

T. P. Regan, Secretary, Helena, Mont.

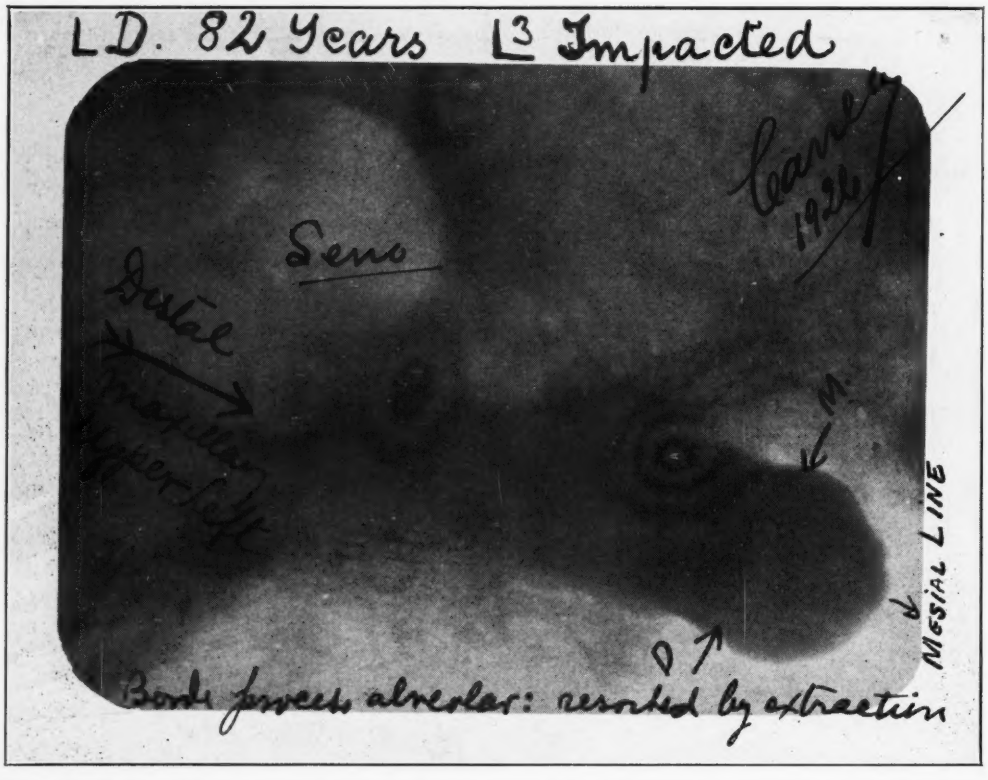
Case Reports

IMPACTED MAXILLARY LEFT CANINE IN A PATIENT OF EIGHTY-TWO YEARS OF AGE*

By Doctor Juan Ubaldo Carrea, Buenos Aires

A TOOTH retained in the thickness of the maxilla for a longer time than it should be in its chronological evolution of eruption; an actual retarding of eruption, is denominated "embedded tooth," or "impacted maxillary tooth."

If the embedded tooth is so placed that on account of its direction and position it can complete the process of eruption, it will make its appearance



sooner or later; but sometimes on account of its abnormal position, or through mechanical causes it cannot make its way out and the retention is prolonged to such an extent that it may go on until an advanced age is reached, causing trouble or not, unless revealed by radiography.

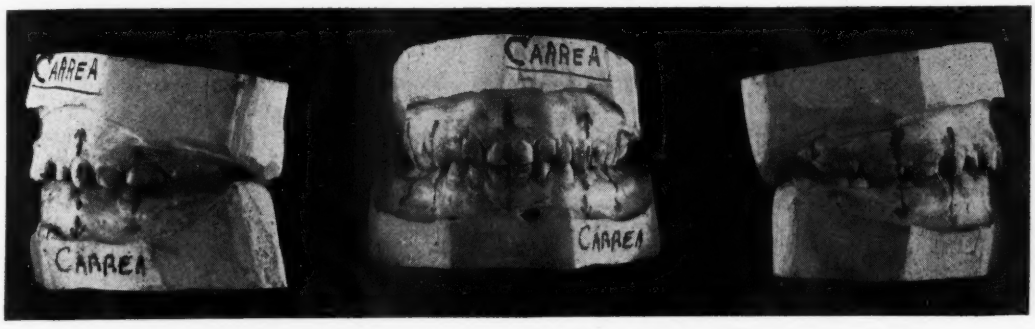
The case which I illustrate with the enlarged radiogram is of an embedded upper left canine, pointing from distal to medial, from above downwards almost transversally, the canine resting on the distal face of the central incisor, and near the alveolar edge; resorbed by the extraction of the left molars, premolars and lateral incisor; belonging to a Mr. L. D., eighty-two years of age.

*Case report given before the First International Orthodontic Congress, New York City, August 16-20, 1926.

DECIDUOUS AND PERMANENT SUPERNUMERARY TEETH, SIX MAXILLARY INCISORS*

By Doctor Juan Ubaldo Carrea, Buenos Aires

IF THE absence of permanent teeth, followed by that of the corresponding deciduous teeth, is explained by the origin of the adamantine organ of second dentition on the epithelial cord of the organ of first dentition, this could justify the coexistence or correspondence between the supernumerary



A. *B.* *C.*

Fig. 1.

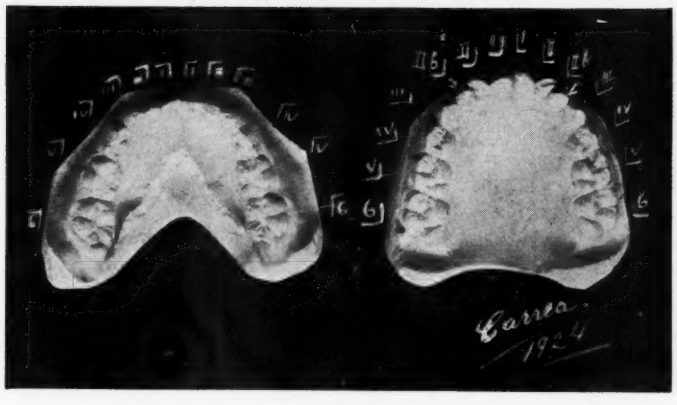


Fig. 2.

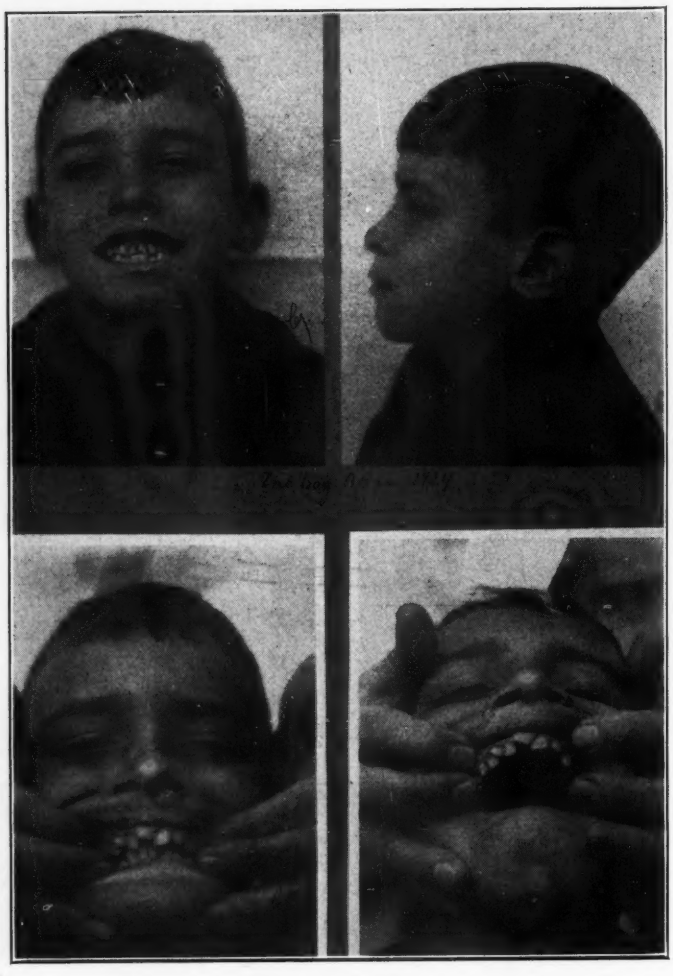
A. *B.* *C.*

Fig. 3.

*Case report given before the First International Orthodontic Congress, New York City, August 16-20, 1926.

Fig. 4.

A. *B.*



C. The boy in 1926. *D.*

Fig. 5.

(supplementary) deciduous and the supernumerary (supplementary) permanent teeth. The supernumerary (supplementary) teeth, so classified by Busch, are those which resemble the normal teeth, whether deciduous or permanent.

The case which I submit to the notice of the members of the congress offers the coexistence of two lateral supernumerary deciduous upper incisors, followed by their corresponding supernumerary permanent ones, giving rise to the impression of the existence of six deciduous supernumerary incisors of normal appearance and replaced by six permanent incisors of normal appearance.

The boy, A. B., born September 16, 1917, attends the clinic attached to the chair of orthodontia under my direction. In 1924, at seven years of age, he measured 1.08 m.; thoracic perimeter expanded, 0.62; exhausted, 0.59; has the appearance of a backward child; pale. Other personal antecedents un-

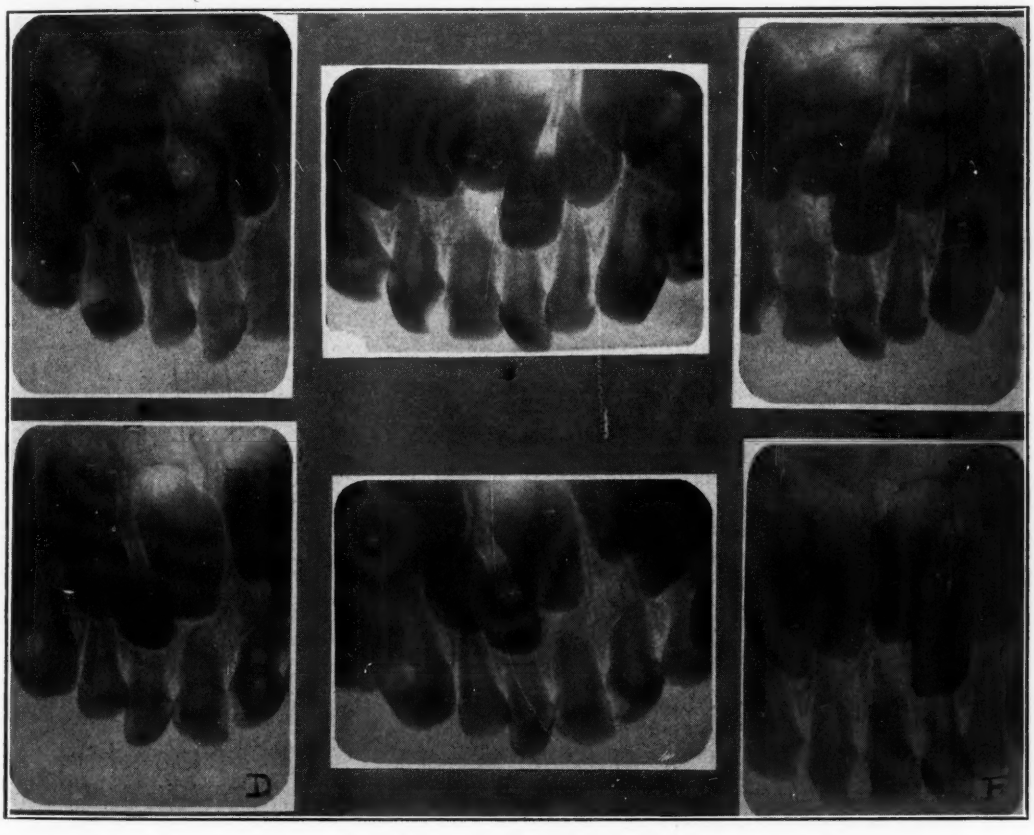


Fig. 6.

important; no hereditary tendencies attributed to the father—a man of poor health, neglected mouth, with alveolar pyorrhea; or to the mother, whose teeth, firmly set, show neglect and lack of treatment for decay.

The three photographs in Fig. 1 and the two in Fig. 2 show the models of the deciduous teeth, the impression of which was obtained in September, 1924.

The three photographs in Fig. 3 and the two in Fig. 4 are the models of the permanent teeth from an impression obtained in April, 1926.

In the two intervening years the change of the six maxillary incisors and the four mandibular incisors can be verified. Of the deciduous canines and molars some still remain and others have fallen out. The first four molars are there.

Fig. 5 shows: above, the photographs of the boy in 1924 with six deciduous maxillary incisors (two supplementary lateral) and the four temporary mandibular incisors; below, the photographs of the boy in 1926 with the six permanent incisors (two supplementary lateral) and the four permanent lower incisors.

Fig. 6, in six radiograms, obtained in 1924 by the distinguished radiologist Doctor H. H. Carelli, reveals the existence of the six supplementary permanent maxillary incisors, four normal and two lateral, which form the subject of the present communication.

TREATMENT AND RETENTION OF MESIOCLUSION SIMPLIFIED (CASE REPORT)*

By Alfred Paul Rogers, Boston, Mass.

MY PURPOSE in presenting the following case history is to illustrate in a very definite way the value of the part that may be played by the sustaining forces of occlusion as exemplified by the muscles of mastication.

This case, as may be seen, is one of extreme mesioclusion in a child of five years. It was found that the child's masseter-temporal group of muscles were undeveloped at the beginning of treatment, and that this condition proved a valuable factor in treatment during the initial stage, offering little

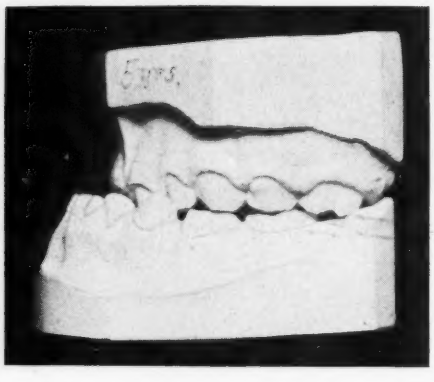


Fig. 1.

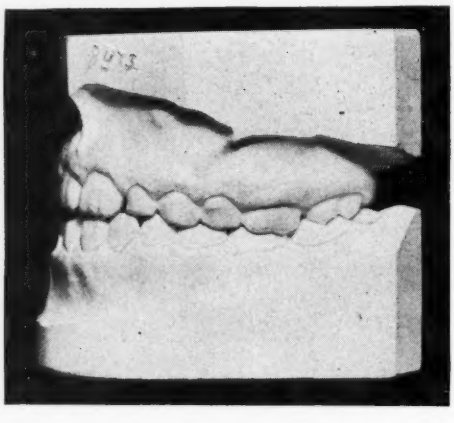


Fig. 2.

resistance to the adjustment of the arches. After three months' use of light intermaxillary elastics the deformity was reduced to a position of mechanical advantage—that is, the inclined planes of the teeth of the opposing jaws were in a position where the application of muscular force could be taken advantage of in the remaining stages of treatment.

The "masseter-temporal" exercise was prescribed, and after faithful continuance for a few weeks the intermaxillary elastics were removed, and later all mechanical apparatus, and the case finished without apparatus of any nature.

No retention has been necessary except that provided by natural means.

*Given before the First International Orthodontic Congress, New York City, August 16-20, 1926.

SPECIMEN CASE*

By Dr. Rudolf Schwarz, Basel, Switzerland

THE accompanying illustrations demonstrate a complete specimen case. Fig. 1 shows the patient, R. B., nineteen years of age, May, 1923. Profile view before treatment. Fig. 2 shows a full face view of the patient before treatment, while Figs. 3 and 4 show the models of the case before treatment.

Figs. 5, 6, 7, and 8 were made January, 1924, and show the various views of the patient and models after treatment. Fig. 9 shows a graph of the maxillary dental arch before and after treatment.

Fig. 1. Fig. 2.

Before treatment.

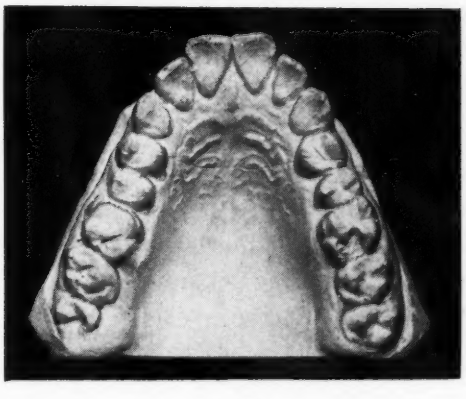


Fig. 3. Fig. 4.

Before treatment.

*Given before the First International Orthodontic Congress, New York City, August 16-20, 1926.

Fig. 5. Fig. 6.

After treatment.

Fig. 7. Fig. 8.

After treatment.

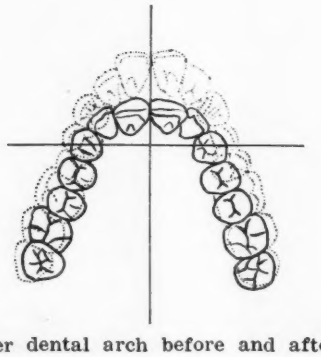


Fig. 9.—Upper dental arch before and after treatment.

DEPARTMENT OF

ORAL SURGERY, ORAL PATHOLOGY AND SURGICAL ORTHODONTIA

Under Editorial Supervision of

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ADDITIONAL NOTES ON THE SIMPLE PLASTIC OPERATION FOR THE RESTORATION OF THE ALVEOLUS (AND ITS USEFULNESS IN OTHER CONDITIONS)*

By Theodor Blum, D.D.S., M.D. (Penn), New York City

Universae Medicinae Doctor (Vienna) F.A.C.D., F.A.C.S.

IN ANSWER to several requests for further information, but particularly for sketches illustrating this operation, the writer has prepared these notes sooner than he anticipated. A further report, however, giving histories of the more important cases operated upon and followed up with casts showing the marked improvement and correction of their respective abnormalities is contemplated in the near future.

Assuming that the previous article entitled "A Simple Plastic Operation for the Restoration of the Alveolus (Preliminary Report), read before the American Society of Oral Surgeons and Exodontists in Dallas, Texas, November, 1924, and published in the Journal of the American Dental Association, September, 1925, may not be available to everybody, a few paragraphs from it will be cited:

"A number of operations for the restoration of the alveolus of the maxilla and mandible have been described for the purpose of making the construction of artificial dentures possible. Such restoration may be indicated in partially as well as in fully edentulous jaws. The conditions necessitating such an operation are mostly due to more or less extensive obliteration of the upper and lower buccal folds, owing to muscular and scar tissue attachment to the ridge or the buccal plate of an apparently normal alveolus, or to such attachment to a largely obliterated alveolus, or, again, they develop in those cases in which the soft tissue attachments are normal, but so much of the alveolus has been lost that they seem to leave the alveolar ridge in a practically horizontal direction. This introduction gives the indication for an operation that will be described below:

*Read before the District of Columbia Dental Society, Washington, D. C., March 8, 1927.

"The operation consists of: the incision, the separation of the flap from the periosteum, suturing, medication and dressing. The incision will be more or less curved, depending on the extent of the lesion, the convexity facing the alveolar ridge. It should be made through the mucous and submucous tissue down to, but not including, the periosteum (Figs. 1 and 2).

"The separation of the flap from the periosteum can be performed either with the periosteal elevator or with this instrument, the sharp point of which has been protected with gauze. The separation is continued to approximately the normal level of the upper or lower limit of the fold."

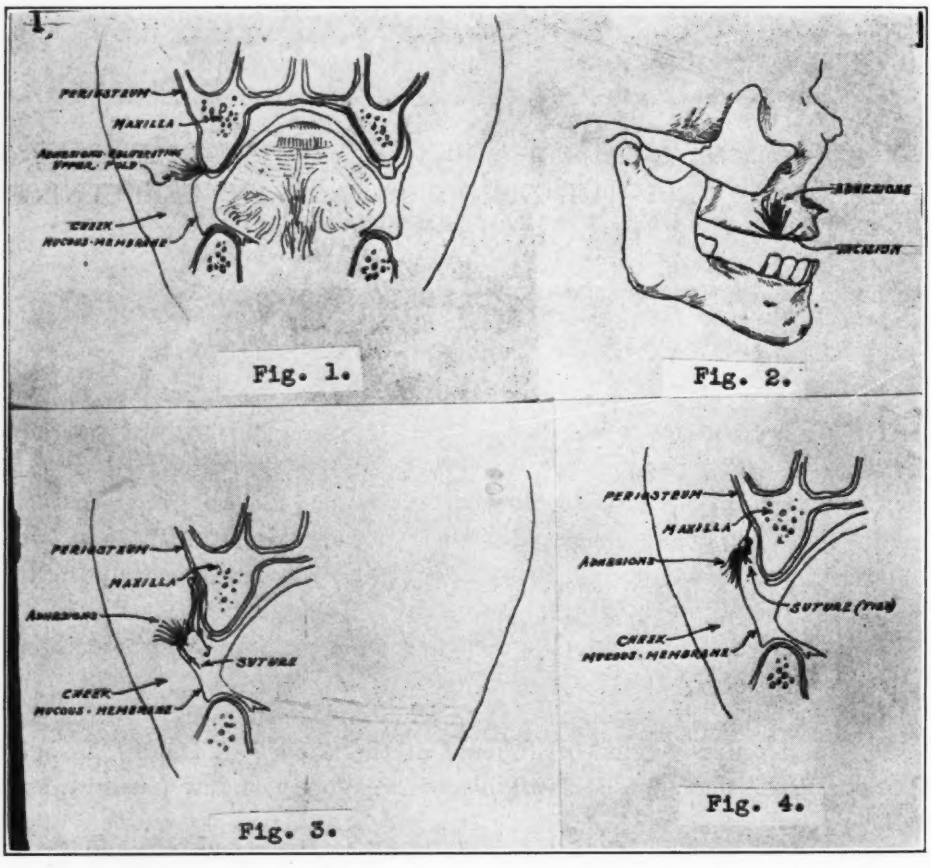


Fig. 1. Fig. 2.

Fig. 3. Fig. 4.

Although the suturing is the most difficult part of the operation, it can be very much simplified and easily performed, if one does not attempt to engage the free edge of the flap and the soft tissues at the deepest part of the wound simultaneously. It may be apropos to describe the path the needle takes through the tissues: it is inserted first into the free edge of the flap, entering it at its mucous surface and leaving it at the raw surface. Enough of the suture is now pulled through the flap to permit the needle to engage easily the soft tissues at the deepest part of the wound. It may be even more convenient at times to use the thread with a needle at each end. Then one needle enters the flap at its raw surface and the second one engages the soft tissues at the deepest part of the wound. When tied, the suture will have pulled the edge of the flap deep into the wound, leaving

mucous membrane opposite the exposed periosteum, thus preventing reunion. Because the removal of stitches is occasionally not only difficult, but also opens the wound at times, the dermal suture has been entirely discarded and 00 catgut alone used instead (Figs. 3 and 4).

There are other indications for this operation besides the ones enumerated above. For instance, after the removal of masses of soft tissue which have been caused by badly fitting artificial dentures, the upper or lower fold may become partly or fully obliterated and suggest the employment of this simple operation.

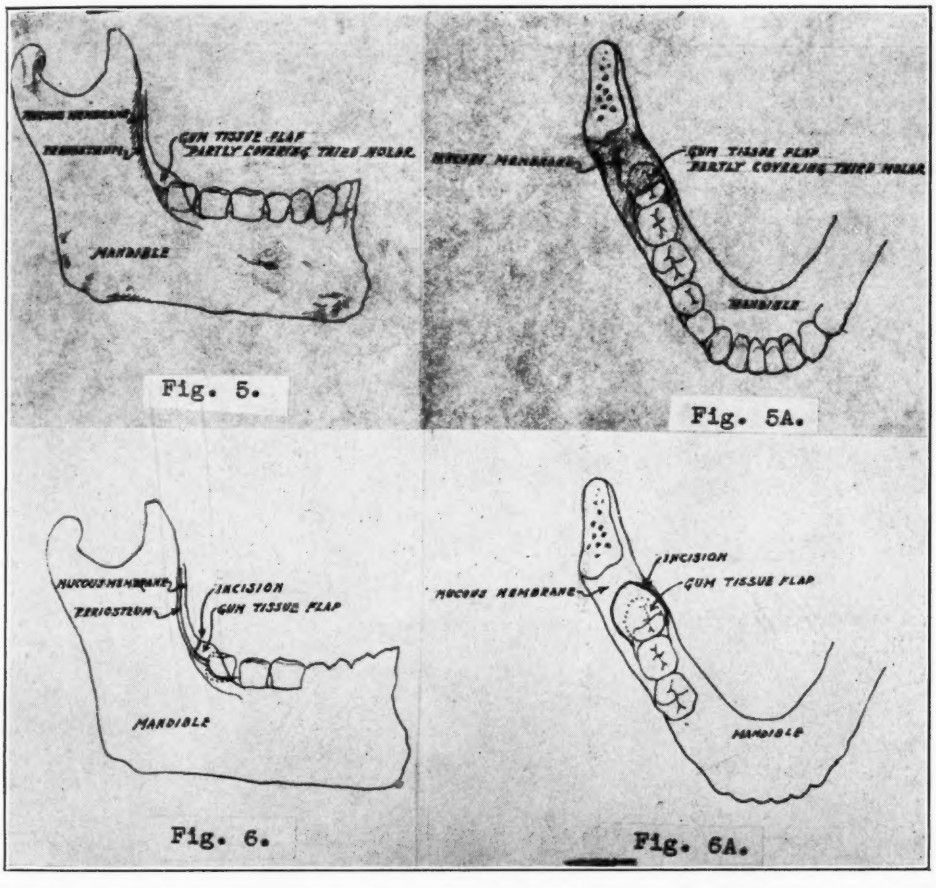


Fig. 5. Fig. 5A.

Fig. 6. Fig. 6A.

The author found it also extremely useful in those cases, where maxillary or mandibular teeth on the buccal, palatal or lingual side must be exposed for the orthodontist. Instead of cutting away the mucoperiosteal flap, its free edge is sutured deep into the wound, thus permanently keeping the tooth exposed. Very little raw surface remains, the chance of the tissues growing over the tooth is minimized, postoperative bleeding (especially on the palatal side) is prevented and the painful packing of iodoform gauze into the wound is unnecessary.

On account of peculiar conditions existing in the region of the mandibular third molar, the operation as employed here is discussed separately. There are partly erupted mandibular third molars in fairly normal position (Figs. 5 and 5-*A*). The gum tissue partly covering its crown is often inflamed

and leads occasionally to very serious infections. To avoid recurrence and in an attempt to save the tooth, the principle of this operation, slightly modified, may be employed. An incision encircling the crown of the tooth (including the gum flap) is made down to the periosteum (Figs. 6 and 6-*A*) and the soft tissues dissected away in such a manner as to leave the periosteum undisturbed and exposed. If there is an excessive amount of cheek tissue present in this region, the incision is carried further posteriorly and buccally. Suturing the cheek-lip of the wound to the periosteum around the neck of the tooth closes the wound entirely and also shortens the mucous side of the cheek (Figs. 7, 7-*A*, 8 and 8-*A*).

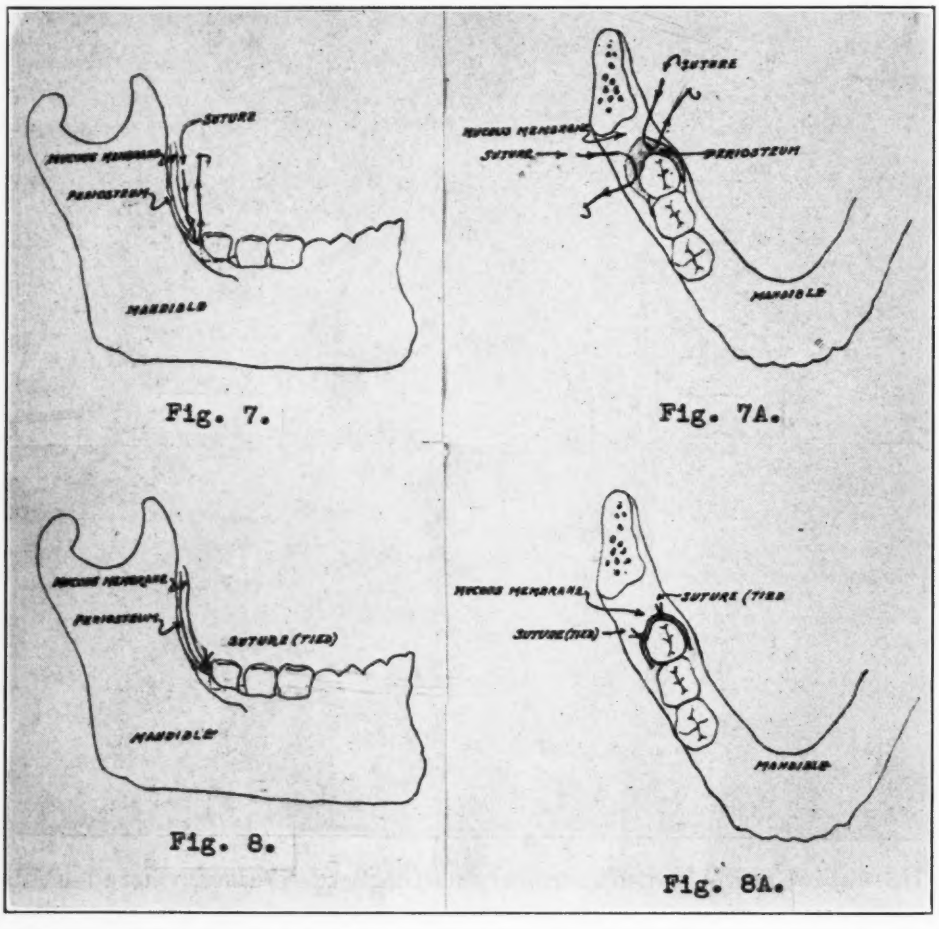


Fig. 7. Fig. 7A.

Fig. 8. Fig. 8A.

Patients often complain of biting their cheeks in the region of the mandibular third molar, which is fully erupted. Here the same operation slightly modified insures success.

It is very difficult to describe the operation clearly. Therefore, an attempt has been made to illustrate it by means of a number of sketches in the hope that they may fully supplement the description.

Since the preliminary report on this simple plastic operation was written, the operation has been quite frequently employed with such astonishing results that I cannot recommend it too highly.

101 East 79th Street.

ACUTE OSTEOMYELITIS OF THE MANDIBLE

By Sterling V. Mead, D.D.S., Washington, D. C.

CASE of Miss S., aged twenty-four years. History showed attempt at removal of an impacted third molar, one root having been left. About a year later this root was removed and immediately there developed an acute condition of the left side of the face and neck, and there were symptoms of bone involvement. There was a bulging of the bone in the third molar region, and the overlying soft tissue was very firm to pressure. There was no appearance of definite localization of pus. The temperature, taken by mouth,

Fig. 1.

was 102° F., the leucocyte count was 8500, and the pain in the mandible radiated from the third molar region to the premolar region. She had an attack of endocarditis and was confined to her bed. Nitrous oxide and oxygen were administered and an intraoral incision was made on the buccal side of the third molar region, and a hemostat pushed toward the inferior border of the mandible where a small amount of pus was found, and a drain tube was inserted. This was removed the following day, and the wound was irrigated frequently. After four days she was able to report at the office, and a radiogram taken May 26 showed osteomyelitis of the mandible (Fig. 1).

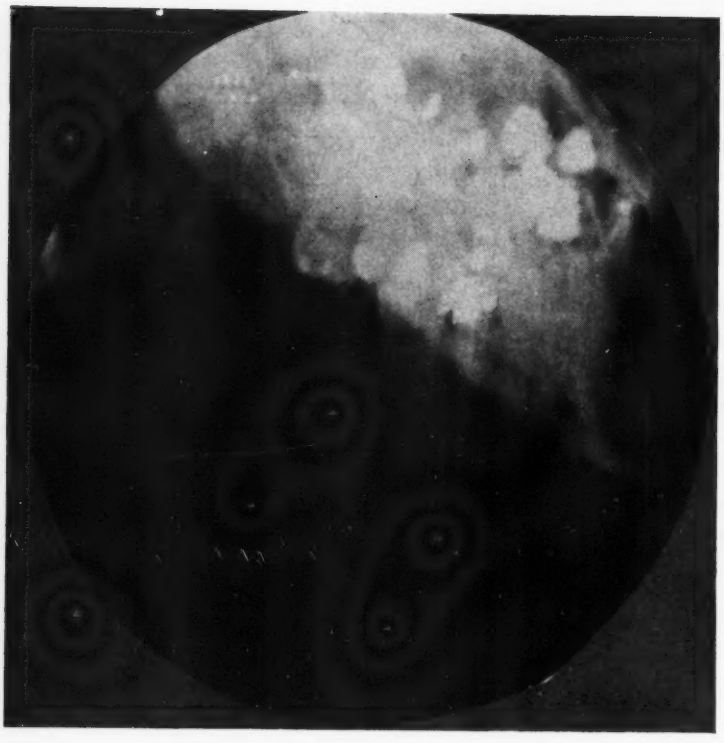


Fig. 2.

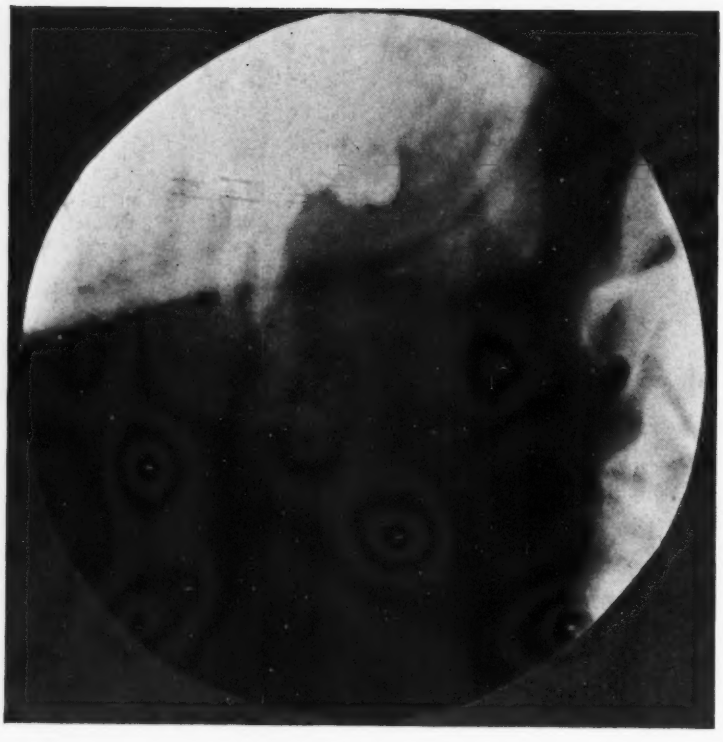


Fig. 3.

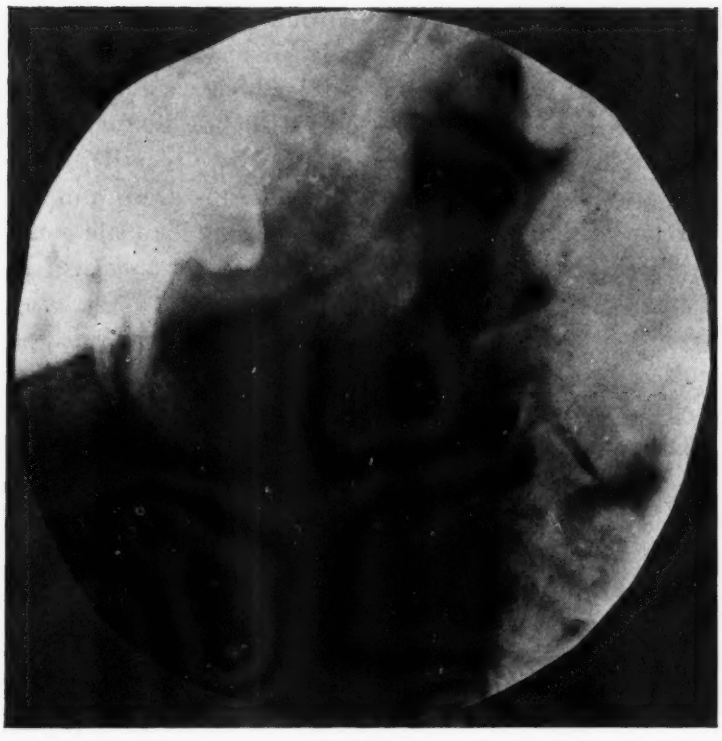


Fig. 4.

Fig. 5.

After the acute symptoms had somewhat subsided, the second molar was removed under nitrous oxide and oxygen anesthesia on June 2, and a free opening was made through the second and third molar areas to the diseased area (Fig. 2). This was kept open by gauze which was changed twice daily, and the area irrigated. There was no curretting or disturbance of the diseased bone area, and sequestration was allowed to proceed unmolested.

On June 15 ethylene and oxygen were administered, and the sequestra were removed from within the mouth. The patient being a young lady, an external incision was very objectionable. Fig. 3 shows the large area of bone involvement immediately after removal of sequestra, and shows the large area of involvement that may often be operated upon successfully from within the mouth.

Fig. 4 taken June 20, and Fig. 5 taken September 22, show the progress of the bone regeneration. The wound had healed, and there was no evidence of the disease. The bone was rapidly regenerating.

DEPARTMENT OF
DENTAL AND ORAL RADIOGRAPHY

Edited By
Clarence O. Simpson, M.D., D.D.S., F.A.C.D.,
and Howard R. Raper, D.D.S., F.A.C.D.

RADIOGRAPHIC EXHIBIT*

By Dr. J. Lowe Young, New York City

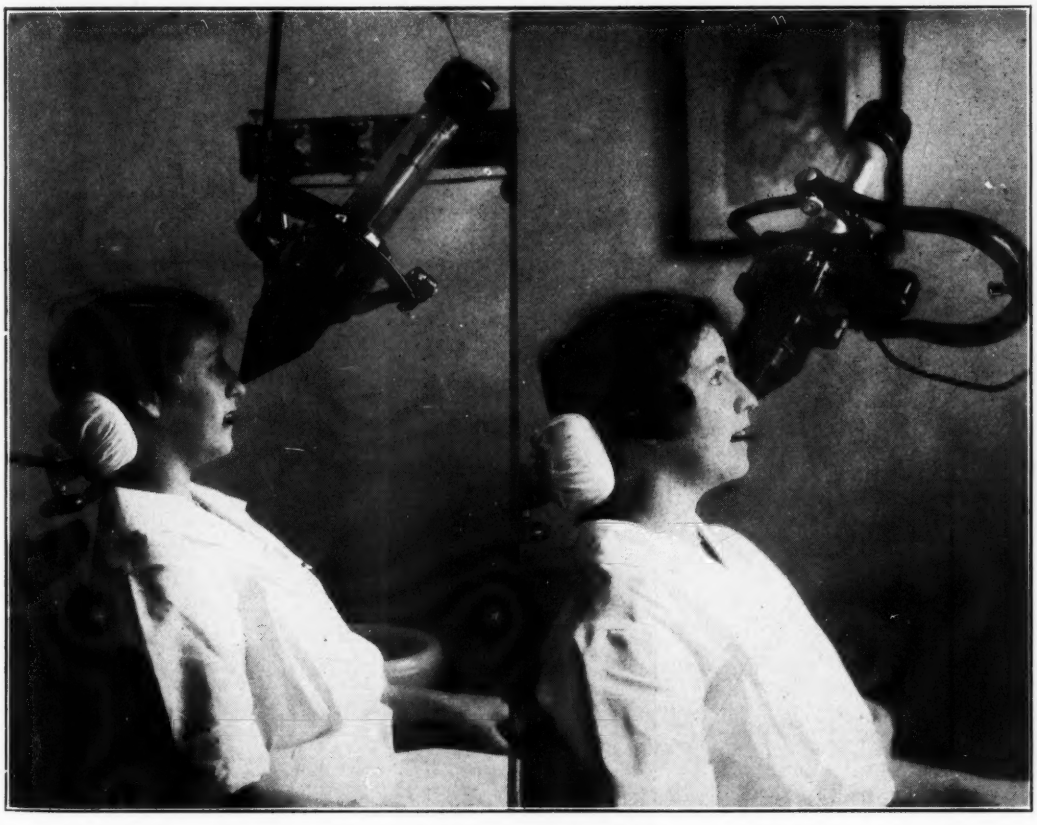


Fig. 1. Fig. 2.

Fig. 1.—Shows patient in position of taking the bite film of the maxillary anterior teeth. The patient's head is posed so that a line drawn from the tragus to the ala of the nose is horizontal or parallel to the floor. The tube is directed at a 45 degree angle to the film placed between the maxillary and mandibular teeth. This gives the root area of the maxillary incisors.

Fig. 2.—With the film between the teeth running from the lateral to the first molar on one side. The tube directed at a 45 degree angle to the film gives the root areas of the maxillary canines, premolars and first molars. A similar picture is taken of the opposite side.

*Given before the First International Orthodontic Congress, New York City, August 16-20, 1926.

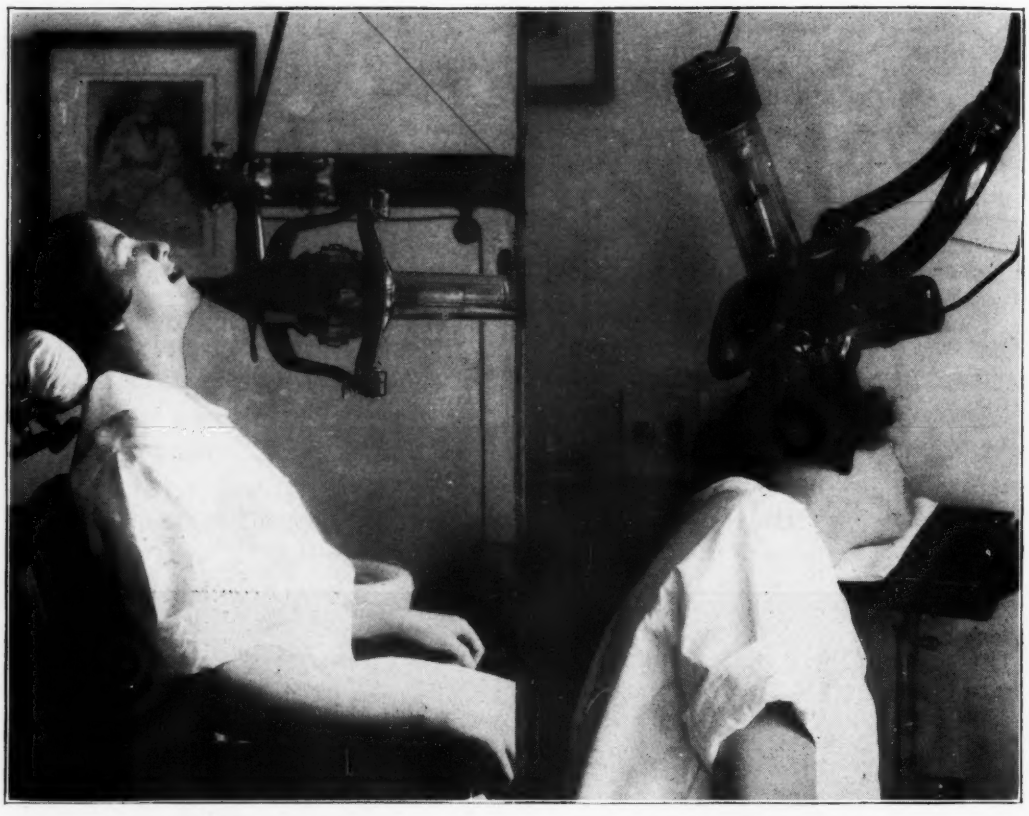


Fig. 3. Fig. 4.

Fig. 3.—With the head thrown well back and the film between the teeth, the point of the tube just slightly above the symphysis, the direction of the tube to the film being a 45 degree angle, the root area of the four mandibular incisors is obtained.

Fig. 4.—With the head thrown well back and then tipped sideways so that the face is resting with the chin close to the casette which carries a 5x7 film, one-half of which is covered by a heavy glass plate. The tube is directed just distal to and under the angle of the mandible of the opposite side of the face from which the picture is being made. This pose gives the entire root area of all teeth in the mandible distal to the incisors. This view also gives the maxillary third molar area so that we can definitely determine the beginning of enamel formation of both maxillary and mandibular third molars. The patient is then moved to face in just the opposite direction and the brass plate moved to the opposite end of the casette and a similar exposure made of the other side of the mandible.

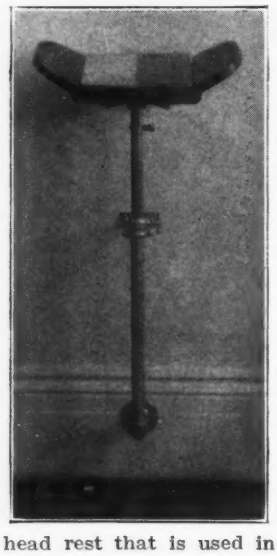


Fig. 5.—Shows the bracket and head rest that is used in taking these extraoral pictures.

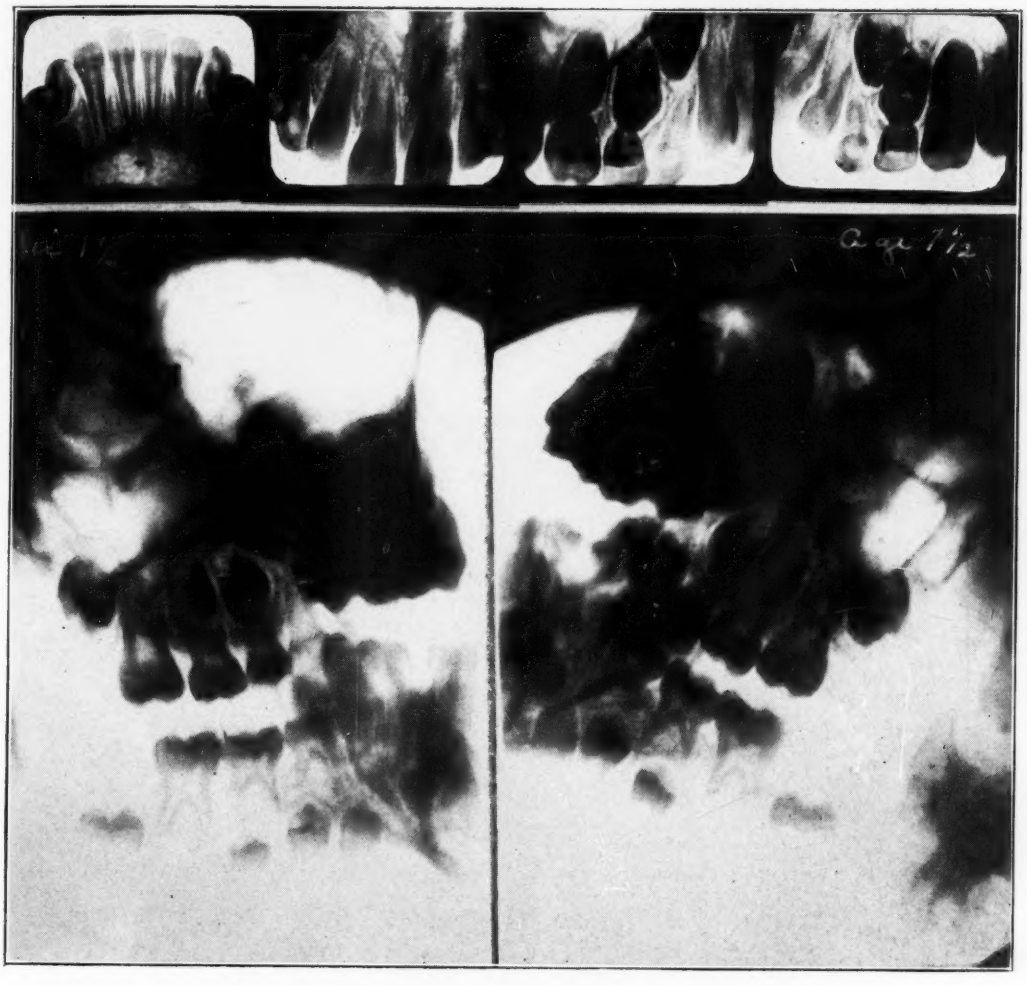
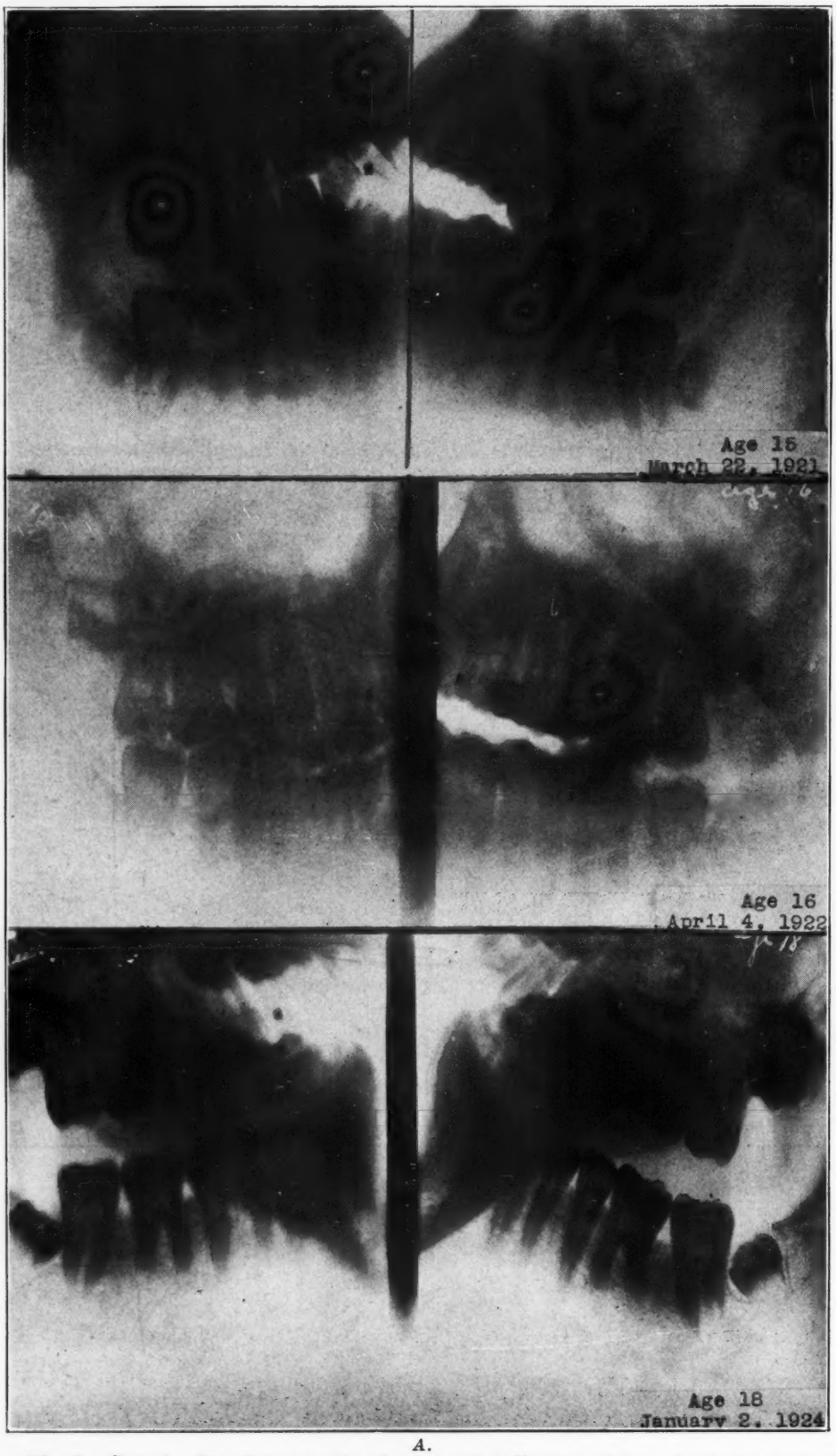
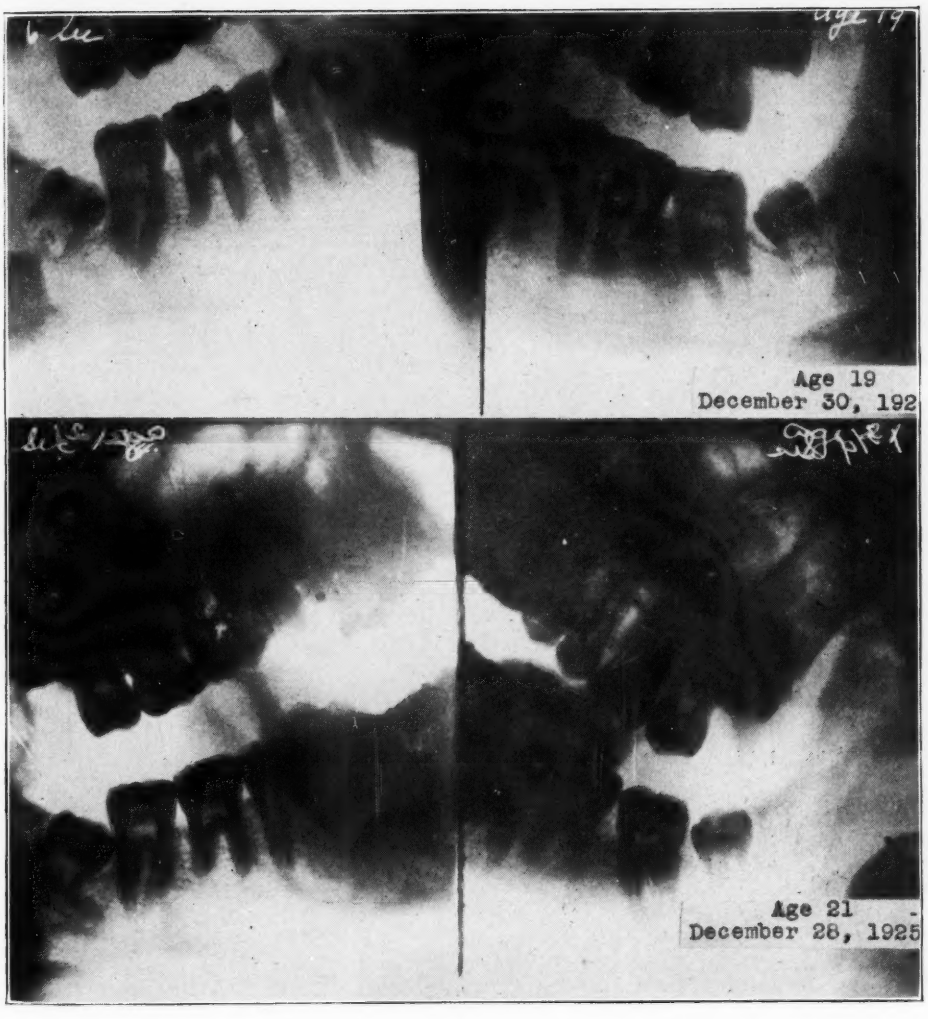


Fig. 6.—Shows the result of such a set of exposures.



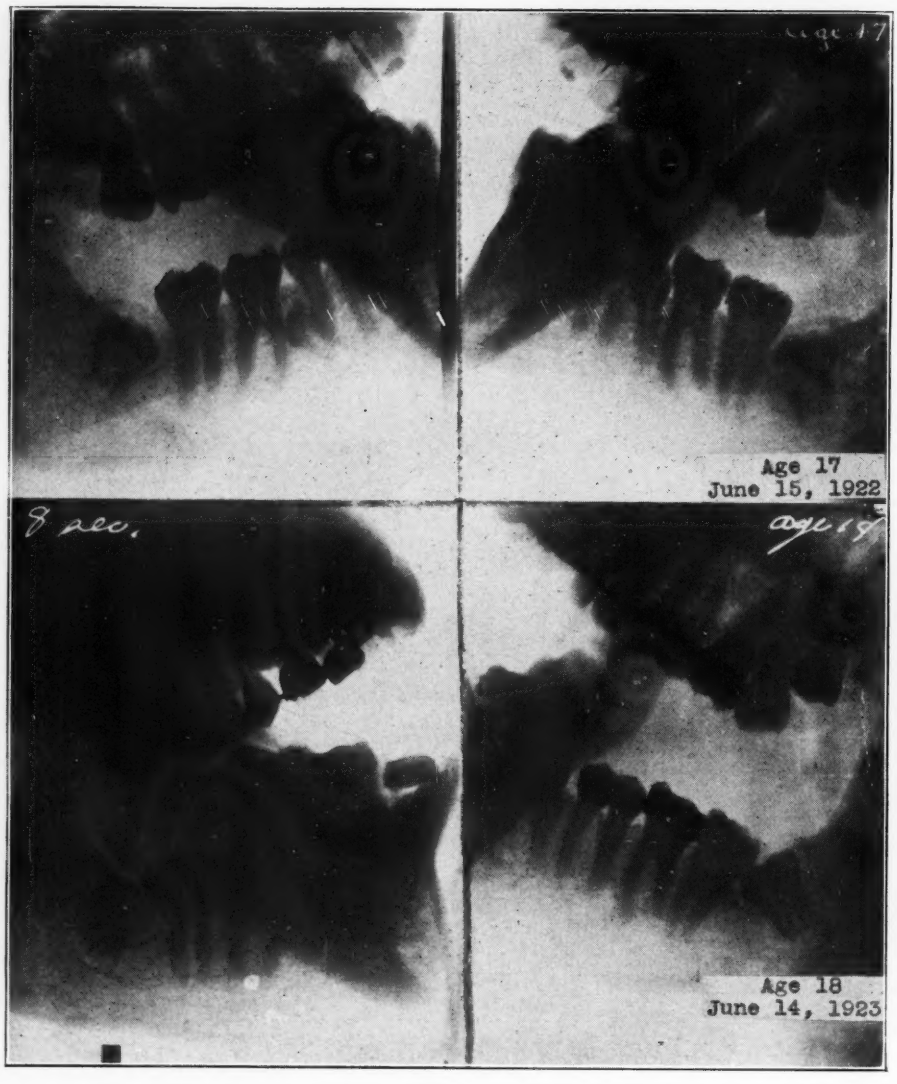
A.

Fig. 7. Case 1.—Showing five sets of extraoral radiograms taken about one year apart, beginning at fifteen years of age. This series shows how wonderfully the mandibular right third molar has straightened up.



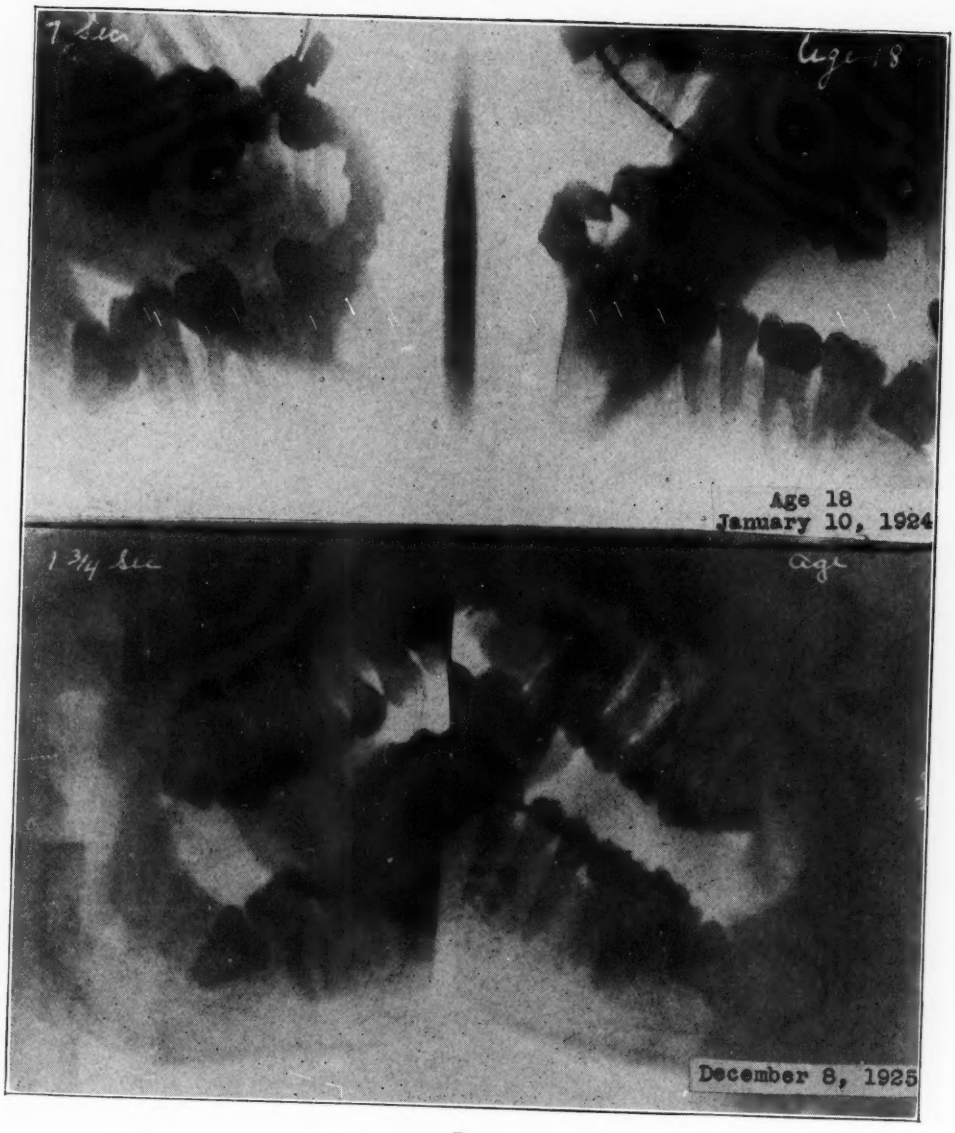
B.

Fig. 7. Case 1.



A.

Fig. 8. Case 2.—Four films taken about a year apart, showing that both mandibular third molars have tipped to almost a horizontal position.



B.

Fig. 8. Case 2.

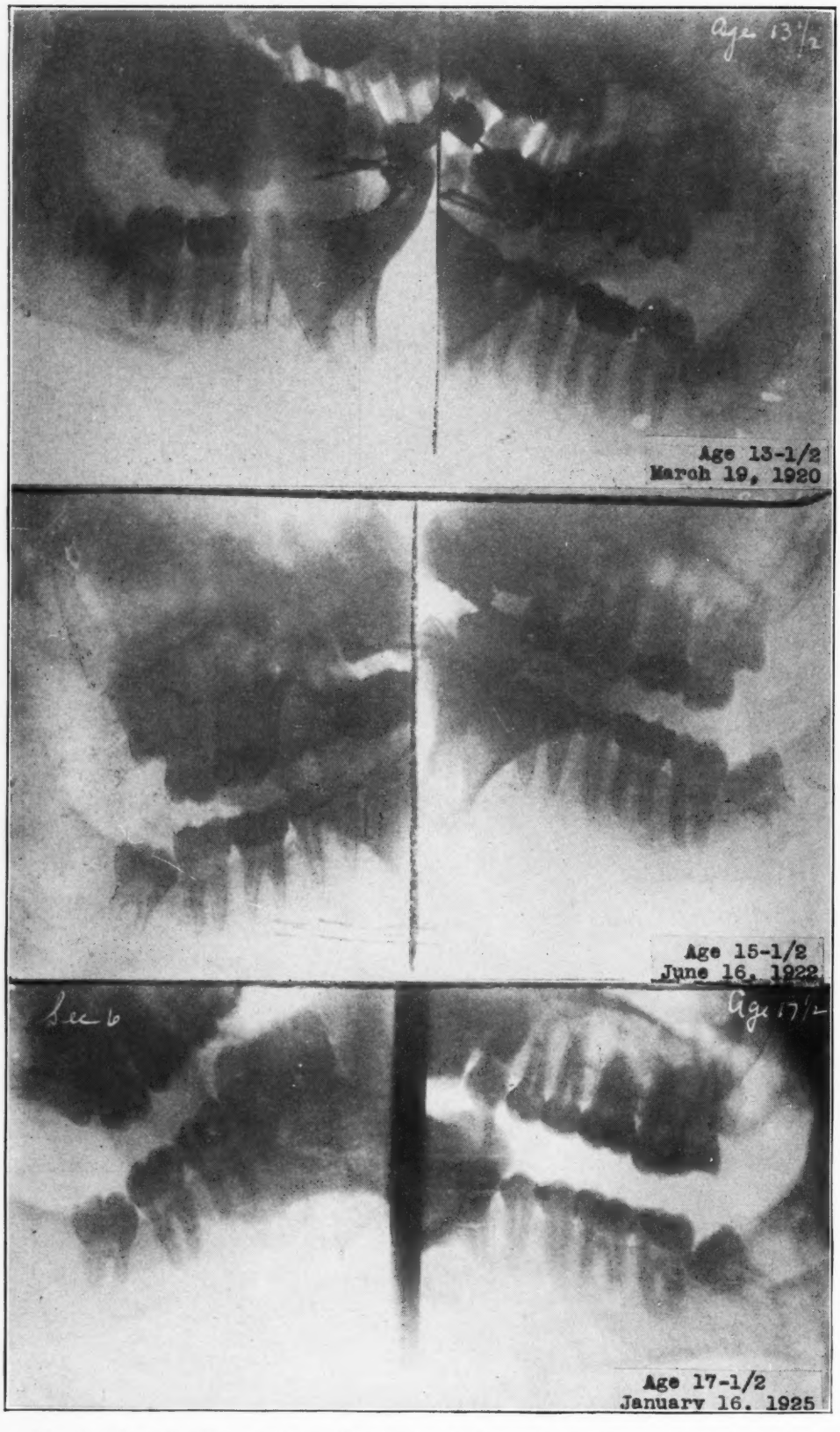
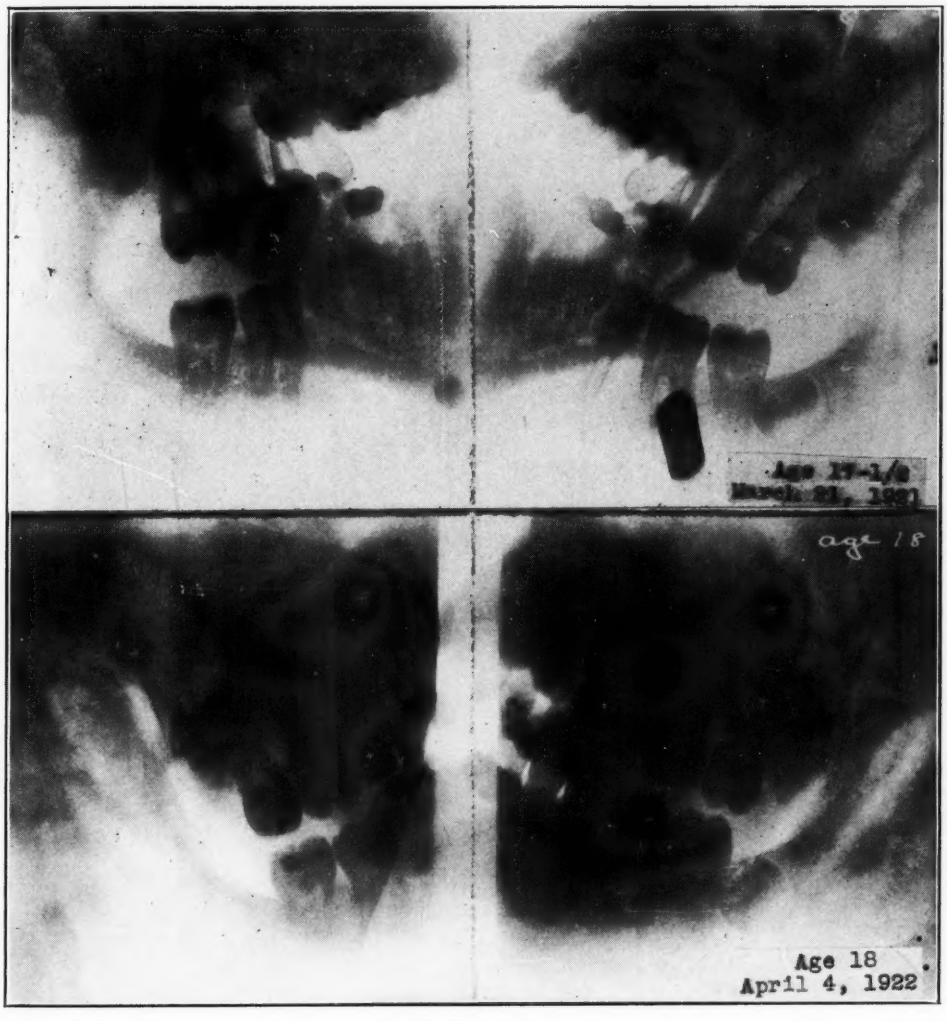
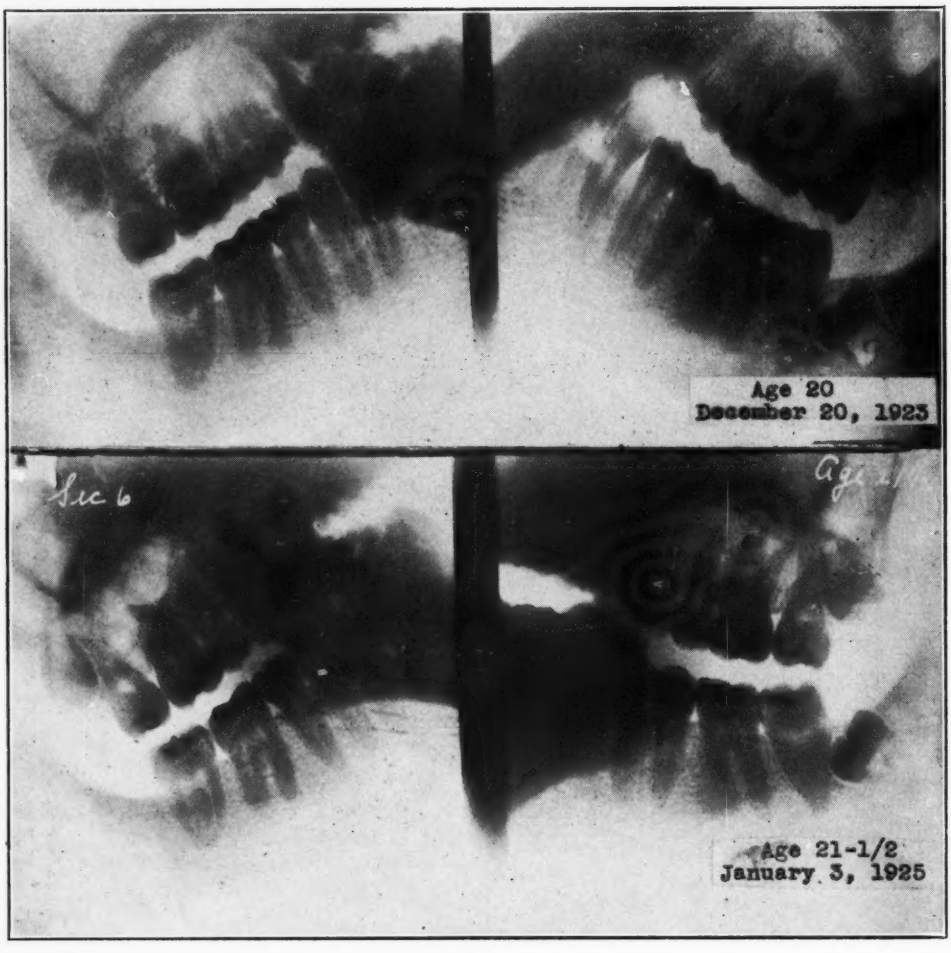


Fig. 9. Case 3.—Three sets of films taken at intervals of two years. These show that the right mandibular third molar and the left maxillary third molar have tipped decidedly horizontally.



A.

Fig. 10. Case 4.—Four films about a year apart, in which the right mandibular third molar has tipped horizontally, there being no third molar on the left side of the mandible.



B.

Fig. 10. Case 4.

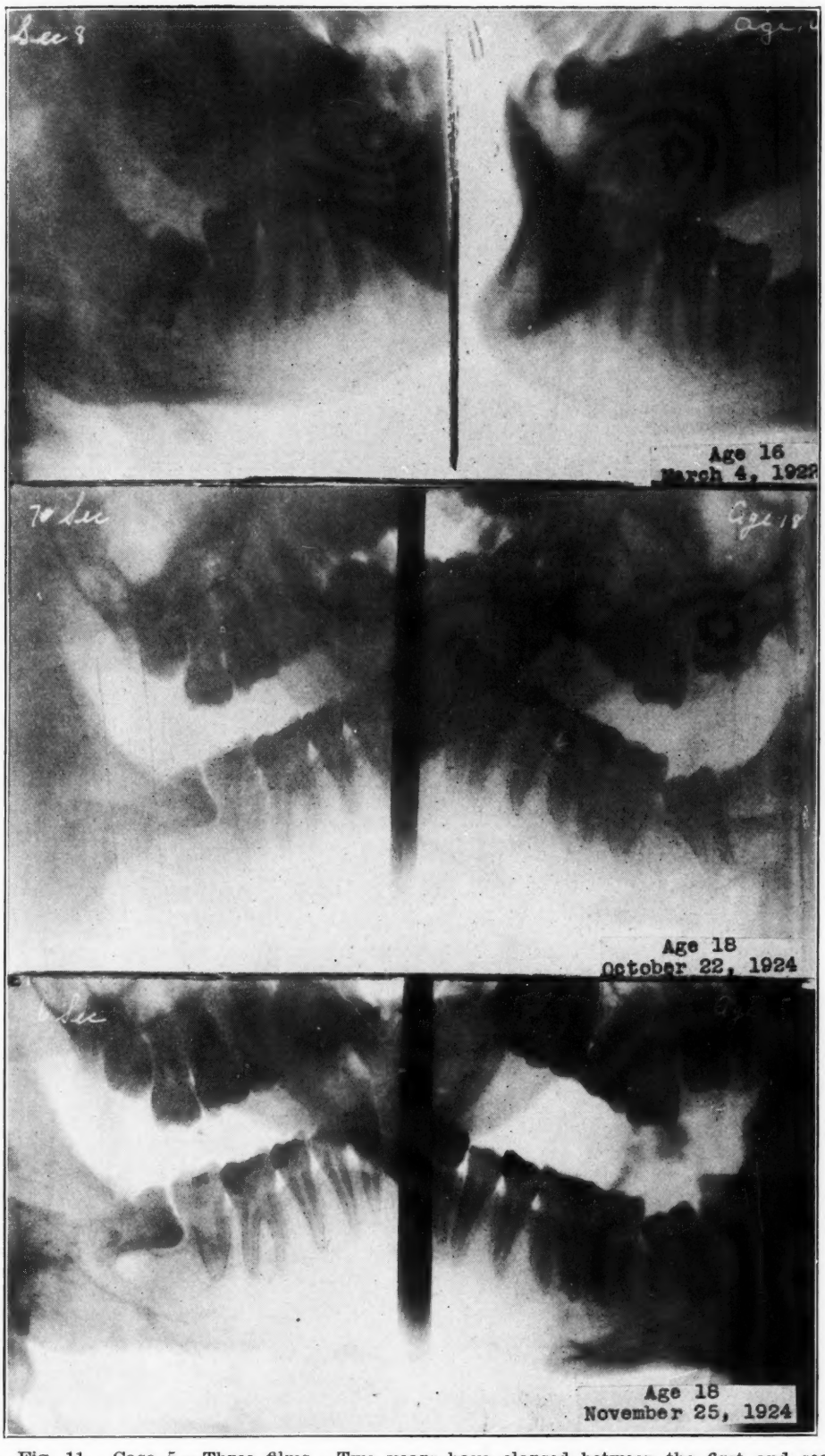


Fig. 11. Case 5.—Three films. Two years have elapsed between the first and second, and one month between the second and third. The reason for this is that I have questioned the possibility of a tooth changing as was shown and I feared that the films had been improperly recorded.

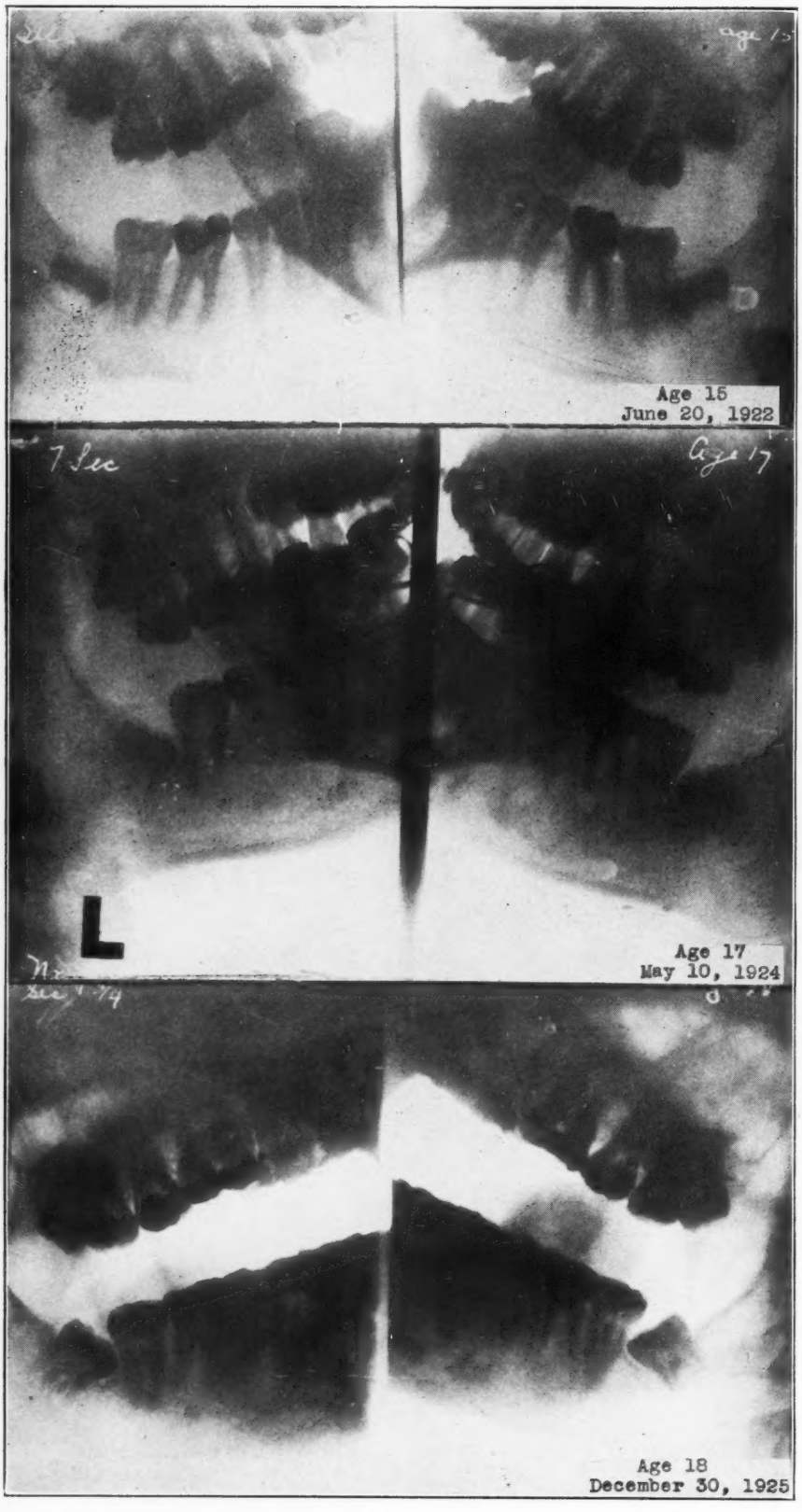


Fig. 12. Case 6.—Three films taken two and one years apart; note both mandibular molars have tipped.

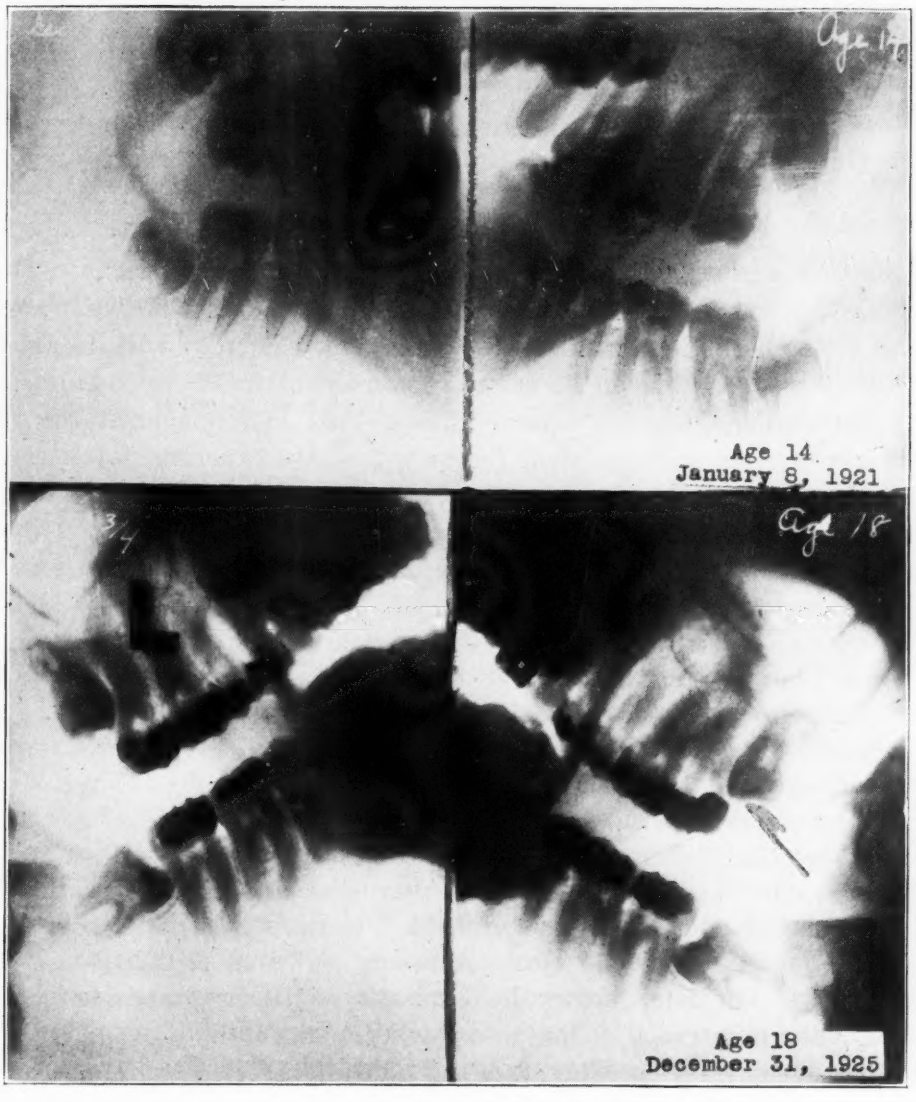


Fig. 13. Case 7.—Two films taken four years apart; note both mandibular molars have tipped.

ABSTRACT OF
CURRENT LITERATURE

Covering Such Subjects as

ORTHODONTIA — ORAL SURGERY — SURGICAL ORTHODONTIA — DENTAL RADIOGRAPHY

It is the purpose of this JOURNAL to review so far as possible the most important literature as it appears in English and Foreign periodicals and to present it in abstract form. Authors are requested to send abstracts or reprints of their papers to the publishers.

Criticism of the Focal Infection Theory. E. Precht (Königsburg). Zahnaerztliche Rundschau, June 12, 1927, xxxvi, 24.

The author has spent some time at the Mayo Foundation and has watched the work of Rosenow. He has not been unduly impressed with what he saw, for it must be borne in mind that men often find what they wish to find and that there is a strong bias in America in favor of the focal infection doctrine. On the other hand German science is somewhat biased against the trustworthiness of American research, for only recently experimental science in the United States was in its infancy. It is certain that the theory of focal infection is still assailable and has several weak spots. It rests on animal experiment and the doctrine of selective affinity of special germs for special tissues has not yet been generally accepted. Rosenow, however, is an ideal laboratory man in many ways, has been at work continuously on this subject for fifteen years and naturally excells as a technician, but it is possible that he is lacking in the strict self-criticism of the pioneer scientist who tries not so much to show he is right, but seems more concerned with efforts to prove himself wrong and disarm all criticism before publishing final results. It is possible to overvalue the importance of actual discoveries. Germany has been strangely indifferent to this subject, which is the more striking because many years ago Pässler promulgated a very similar doctrine of chronic infectious foci and admonished the profession to keep this possibility always in mind. This was before the American theory had come to light and Pässler was ignored at the time, just as the Transatlantic theory was ignored later. Recovery from ailments after tooth treatment proves nothing in the long run, as a follow-up of patients often shows, for the old symptoms have a way of recurring.

Cleft Palate Surgery and the Dental Profession. Editorial in The Dental Surgeon, June 18, 1927.

At the session of the Royal Society of Medicine, Surgical Section, on June 1 there was a discussion on cleft palate in which two dental surgeons took part. Dr. Pitts (dentist) stated that many dentists were opposed to the operative treatment of this affection, having a bias, perhaps unconscious, in favor of prosthesis. It must be acknowledged that surgery is not always

successful, and that closure of the breach is not always followed by good functional results, while deformity of the jaw may even aggravate the original condition. The Langenbeck procedure leaves far less deformity than the flap method, and it has not yet been shown that the latter gives better functional results. If a first intervention failed, he would not repeat it. Dr. Fry, the other dental surgeon, has followed up many operated cases in children and has noted an absence of good functional results. It is extremely difficult for the dental specialist to do much for these failures. If the general surgeon could supply a functioning soft palate, the dentist could obviate the results of the bony defect.

The editor adds that in these operative insuccesses the dentist is the only reserve resource with his mechanical appliances, the difficulty being, as above stated, that he cannot make good the absence of the functioning soft palate. He himself has seen the best results in these cases from a box obturator rigidly attached to the plate which covers the hard palate. This is difficult to prepare and install and there must be repeated remodellings in the mouth. In favorable cases it makes possible swallowing in comfort and clear speech. It may be attached to remaining teeth and may itself carry teeth, edentulous cases presenting specially difficult problems.

Dangers of the Toothbrush. E. Mayer (Mainz). Zahnaerztliche Rundschau, June 5, 1927, xxxvi, 23.

Back of the modern use of the toothbrush is an enormous propaganda to the effect that it is a preventive of caries. We have to ask ourselves, first, if it does what is claimed, and second if its use is harmless. This implement has by no means yet attained an ideal form and technic of use. It is clear that it may be of value in cleansing the masticatory surfaces where caries most often begins and that its value is much less for the interdental spaces and necks, while it is in connection with the latter than the brush becomes a possible source of danger to the gums. Coarse brushes often cause slight injuries to the later, the epithelium comes away and bleeding follows. The affection now known as chronic atrophic papillitis and usually ascribed to infected food particles between the teeth may perhaps be caused at times by improper use of the brush. The interdental papillae are believed to play a leading protective rôle in the integrity of the teeth.

Studies have been made of the germ content of toothbrushes, and the ordinary pus formers and fusiform bacilli have been found, and it is readily apparent that the infected brush may inoculate the gums with virulent organisms through minute wounds which are mechanically produced by the same brush. The author has made a series of observations on healthy people with previously sound gums and teeth in which he accuses the brush, or rather its excessive and intensive use, of causing pyorrhea; and when the usual causal factors of this affection are absent, he makes the brush a probable instigator of this disease. A hard brush violently and often used may be made responsible at times for enamel defects, and change to a soft brush has apparently arrested the mischief.

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EDITORIALS

Fundamental Principles of a Systematic Diagnosis of Dental Anomalies*

SHORTLY after the early publication of Dr. Simon's book in Germany copies found their way to America. Several of these copies fell into our hands and because of a limited knowledge of German, we had three translations made of the German work with the idea of reviewing the book and publishing it in the *International Journal of Orthodontia, Oral Surgery, and Radiography*. We found so many contradictory statements in the translations and so many statements which were anatomically wrong that we could not make ourselves believe the translations from the German work were exactly correct. Later when Dr. Simon presented his paper before the American Society of Orthodontists, we were still surprised at some of the statements that

*Fundamental Principles of a Systematic Diagnosis of Dental Anomalies. By Dr. Paul W. Simon. Translated by Dr. B. E. Lischer, Stratford Co., Boston, $5.00.

were made in the paper, but we were inclined to believe that the statements were made because of Dr. Simon's unfamiliarity with the English language as spoken by Americans. We, therefore, had very little to say in reference to the theories of Simon because invariably when we ventured an opinion, we were told by disciples of Simon that we knew nothing about the subject or we misquoted Simon.

We, therefore, waited patiently until the English translation of the book by Dr. B. E. Lischer came out, and we were surprised to find that practically all of the misstatements of facts which had been discovered in the German work had been carried on by Dr. Lischer to the English translation. It is indeed unfortunate that a book which attempts to present a system of diagnosis of dental anomalies should contain so many misstatements. It is especially unfortunate to find that these statements are wrong from an anatomic standpoint.

The first part of the book is devoted to critical examination of the more important classifications of dental anomalies heretofore employed. We do not know whether Simon is unfamiliar with the Angle classification as given by Dr. Angle, or whether he has deliberately attempted to confuse the issue by misquoting the Angle classification, as it has been taught in America by Angle students. Of course, we realize that a great many of the later statements regarding Angle classifications have not appeared in print, although they have been taught to students for a number of years. Simon may have had no way of knowing of these later developments. However, we can see no reason for the misstatements which were made by Simon regarding the Angle classification, because Dr. Lischer should have been familiar with some of the things that have been taught in America. Simon states, "Followers of Angle regard only sagittal antagonism as valuable." By this statement Simon tries to indicate that the Angle students only recognize malpositions of the teeth on one plane. In Angle's original classification he described seven malpositions of teeth and it is indeed a travesty of justice to find that Simon, in the third part of his book, has garbled these original positions as described by Angle without giving Angle any credit for them. Of course, these primary positions were recognized even before Angle brought out his classification. But in reading Simon's text one would imagine that Simon had discovered these things as his own.

In making an examination of the important classification of dental anomalies, Simon quotes only from the early writings of Angle and does not refer to later textbooks published in America. We do not know whether this omission was intentional or an oversight. Simon tries to contend that the Angle classification is a fiction, but he also admits that his system of diagnosis is likewise a fiction. Followers of Angle are not willing to admit that the Angle classification is a fiction because they contend that the Angle classification of malocclusion is based upon the relation of the mandibular arch as related to the maxillary arch, the face, and the cranium. These facts were recognized by Angle in his early classification which is proved by the fact that he tried to establish certain laws and rules for the development of the face. Dr. Angle early found that the development of the face could not be

studied by laws, but that different individuals must be considered according to type. Simon's "Law of the Canine" as used in diagnosis of dental anomalies practically eliminates type, at least one would consider so after reading the book. In considering Angle's "Class One," Simon says that "Its main characteristic is a normal occlusion of the first molars. When the first molars are in normal occlusion, the case belongs to 'Class One.'" Angle and his students have never contended that the main characteristic of "Class One" was normal occlusion of the molars. In "Class One" we find that we have a normal anterior-posterior relation of the arches but necessarily a normal occlusion of the molars. Simon also says in speaking of "Class One" that "When the first molars are in normal occlusion, the case belongs to 'Class One' * * * ." Such a statement may be true in a few instances, but we find certain "Class One" cases in which we have a normal anterior-posterior relation of the arches and the first molars have a normal cusp relation to each other, but still occupy some position of malocclusion.

In reviewing the *Fundamental Principles of a Systematic Diagnosis of Dental Anomalies,* we shall try to confine our review to statements as made in the book. In referring to the question of diagnosis we find this statement, "It is obvious that we are dealing with a mathematical problem." It has long been our belief that malocclusion is an anatomic or biologic problem and we cannot agree with Simon that it is a mathematical problem. Of course, Simon probably means that the denture of man can be analyzed in three planes, which fact was recognized long ago by Dr. Stanton and others. Simon, in referring to the establishment of three planes, makes so many contradictory statements that we wonder whether the method is all the author claims for it. On page 50, we find "The denture of man is an 'object' positioned in the head-cavity, and if its location is to be definitely determined it must be measured in three dimensions." You will notice the author speaks of "definitely determined" but later it seems as though he does not realize what "definitely" means in English because we find the following, "When we speak of exact measurements we always imply that they are relative." We fail to see how something can be "exact" or "definite" in one sentence and then when convenience demands be considered only as "relative."

Also on page 50, we find the following statement, "Consequently it is impossible to discover permanent mathematical relations on the facial portion of the head, which we could accept as a basis for measurements." It was always our understanding of the Simon system that planes were located by some relation discovered on the facial portion of the head.

In regard to selecting the planes of Simon, we find the following statement, "The points on the head of the living subject which we select for a plane must be easy to locate accurately." A little further on we find the following, "The selection appears doubtful, which it is in fact, because it lies in the middle of the area which is so frequently affected by anomalies." You will notice the above sentences contradict each other, and in selecting the median plane, Simon states that "it lies in the middle of the area which is so frequently affected by anomalies." Therefore, we fail to see how it can be accurate, and if not accurate, how can it have any great value in diagnosis?

In speaking further of the median plane he says, "One must not forget that our median plane is, and should be an artificial construction. We are unable to accurately determine the natural median plane of the living." If Simon's statements are true, and we believe they are in this case, we fail to see how the median plane is going to be of any great value and how any diagnosis based upon the median plane will be anything more than a guess.

Again, in referring to the selection of planes, Simon states, "These points must be (relatively) fixed, they must lie in an area which is seldom affected, and dental deviation must not exercise any influence on their location." Regardless of the above statement we have shown you that Simon admits that the median plane is artificially selected.

We have already called attention to the fact that the first part of the book was devoted to criticism of other methods of diagnosis. After these criticisms have been outlined according to the interpretation of Simon, we find the author makes the almost incredible statement, "Now that the indispensable exact methods of investigation have been explained from the philosophical point of view, a presentation of my own methods may begin." We are indeed very sorry that we cannot agree with Simon's statement that his methods are "indispensable" and "exact." We also find that in describing the three plane system the author gives a definition of a plane which is contrary to anything we have ever seen in geometry. He says, "Geometrically, a plane must pass through at least three points which are not in a straight line * * *." In looking up the definition of a plane in the dictionary, we find that a plane is "a surface such that a straight line joining any two of its points lies wholly in the surface." We, therefore, fail to see how Simon can say a plane must pass through at least three points which are not on a straight line. Such a thing would not be a plane.

Simon's work contains a statement which has been disproved by many men. The statement is as follows, "Under normal conditions the orbital plane intersects the denture in the region of the canine, and it does it at any age—from five to forty years—in the temporary as well as the permanent teeth." Probably this statement more than any other, by anatomic investigation, has disproved the Simon system. Of course, we realize that Simon and his followers can give great leeway in the words, "region of the canine." Investigation has proved that the orbital plane intersects the denture at different positions in different ages. In young individuals there is a tendency for the orbital plane to intersect the dentures in front of the canine, while as the individual grows older, we find the orbital plane will intersect the denture posterior to the canine. Of course, Simon and his followers may contend that the line which comes in front of the canine and the line which goes behind the canine are both in the "region of the canine." Loosely speaking, such may be true, but it is too loose a statement to be used as a diagnostic point in the treatment of malocclusion.

In speaking of the three plane system, Simon says, "The biologically conditioned inaccuracy of a measure-point applies to all of them, and this must not be ignored. We do not want to reveal it but this much we can impart now: a diagnosis is not influenced thereby in any manner whatsoever." It

is impossible for us to reconcile ourselves to the conflict as made in the above quoted statement. The first sentence admits the inaccuracy of the measure-point. The second sentence claims this inaccuracy does not affect the diagnosis in the least. We have been told that Simon's method of diagnosis is accurate, but how can we admit that the diagnosis is accurate when the author admits the inaccuracy of the measure-point?

Dr. Simon also believes, judging from his statement, that the relative relation between the denture, face and cranium remains the same. Age and growth apparently have no influence on the Simon theories for we find the following statement, "I have had the experience to observe that the sagittal relations between the denture and the orbital plane remain approximately the same." Other investigators do not agree with the above statement. Another statement in variation to the laws of development is found in the following, "The eye-ear plane is used as an unchanging basis for these measurements, and in relation to which the face grows upwards and downwards." (Page 129.) The author presents no evidence to prove the above startling statement.

Simon's system employs the making of maps or charts from the gnathostatic models. The maps or charts as made by the Simon technic are much inferior to those prepared under Dr. Stanton's system. The greatest weakness in the Simon system of charts as prepared from models is the possible error which may occur in making the gnathostatic model. Secondly, the measurement of the model is made by an instrument which is not a precision instrument, and therefore possible errors may occur again. Thirdly, the measurement is again transferred, by using another instrument, to a piece of paper, which promises still another error. Consequently, the possible inaccuracy of the Simon map is three times as great as the inaccuracy which may develop from the Stanton system.

The author lays great stress on the importance of photostatic photographs which he claims to be the only photograph which presents scientific knowledge. We fail to see where the photostatic photograph is any better or any worse than other photographs. It is true, Simon has developed a unique method of posing the patient and by using a fixed focus camera has shortened the time necessary in taking photographs. After the so-called photostatic photograph is made it has the same advantages and the same disadvantages as if made by any type of camera. We fail to see how the photostatic photograph is going to do the things claimed for it. For example, we find on page 153 this statement, "Post-operative changes * * * and subsequent functional disturbances may be controlled photostatically." If this were true, all of our orthodontic difficulties would be at end.

Another criticism of Simon's system and diagnosis of dental anomalies is the fact that he has attempted a classification and has used terms which are very misleading. The real scientific facts of Simon's classification and the various types of deformities which he mentions have been long recognized in America. It is true orthodontists have had some trouble in finding terms to express and describe certain deformities. This difficulty has been due to the fact that certain writers have attempted to find one word which would de-

scribe a complicated condition rather than be content with giving a brief description of the deformity as it exists. In speaking of deviations of the denture (page 242) as measured from the median plane, Simon uses "Contraction (the part of the jaw is too near to the median plane)." As an opposite of that condition he uses "Distraction (the part of the jaw is too far from the median plane)." He has selected two words from the English language which have a recognized meaning, neither one of which has the meaning he has given them. We have long spoken of "contracted arches" used to describe the condition which Simon refers to as "Contraction," but we have also called attention to the fact that the so-called contracted arch is generally not a contracted arch but an underdeveloped arch. "Contraction" signifies a bringing together, and an underdeveloped arch is not one which has been brought together, but is one which has never been parted or one which has never grown. "Distraction" is in no way associated with "contraction." "Distraction" is a drawing off or diversion of the mind; a drawing of the mind in different directions. There is no definition in the English language of "distraction" which would indicate that it is associated with or the opposite of "contraction." We find Simon speaks of deviations measured from the orbital plane (page 243) as "Protraction (the part of the jaw is too far forward)." "Protraction" is the act of drawing out or lengthening in time; the act of delaying the termination of anything. You will notice, therefore, the inconsistency of Simon's terminology when you will remember that he used the word "distraction" which refers to state of mind and then used the term "protraction" which is in the measuring of time; and tries to switch these terms in measuring the maldevelopment. The above stated definitions are no more confusing than when we read that "retraction" refers to the part of the jaw too far posteriorly. "Retraction" is the act of recalling or taking back; the declaring to be false; the drawing back or backward, the drawing in of, as, e.g., a serpent retracts its tongue. An underdeveloped mandible cannot be referred to as a retracted mandible in the sense that Simon uses the term. We might say that in treating anterior occlusions we retract the mandible or at least we hope to or try to; but a posterior occlusion case is one in which the mandible or mandibular arch has never been forward; consequently, it can never be referred to as a "retraction." Under deviations measured by horizontal plane, we find terms which are equally as misleading and confusing. "Attraction (the part of the jaw too near to the eye-ear plane)." For the opposite of "attraction" we find the word "abstraction (the part of the jaw too far removed from the eye-ear plane)." So far as the use of "attraction" and "abstraction" as employed by Simon is concerned, they can just as well be reversed as they would be no more confusing. "Attraction" and "abstraction" refer to two entirely different conditions and neither one can be applied to the description of deformities. "Attraction" is the act of drawing to or towards itself; the causing to adhere without the agency of any visible or known mechanical connection, as the magnet attracts iron, the sun and planets attract each other. You, therefore, see that the word "attraction" as a means of describing the condition referred to by Simon is

absolutely out of the question. The eye-ear plane does not attract the denture. "Abstraction" is the act of drawing or taking away; separation; removal; as the abstraction of heat; the withdrawal of the mind or attention of; chemically, abstraction means extraction by means of distillation. Therefore, the two words as used by Simon are entirely different than they are used in the English language. He has tried to use verbs to describe a deformity and has not even selected verbs which are directly opposite to each other.

In the interests of scientific simplicity we cannot see how Simon's terminology can be taken seriously in America.

The entire system of Simon has for its object the relation of the denture to the face and cranium in the study of dental deformities. This idea is not new as it has been recognized by many men years before Simon brought out his so-called Law of the Canine. The part of Simon's classification that is true is not new and the portion that is new is not true.

Transactions of the First International Orthodontic Congress, New York*

THE editor of the "Transactions of the First International Orthodontic Congress" is to be heartily congratulated on having so speedily marshalled all the immense amount of material at his disposal into an interesting volume of 767 pages, which we are pleased to bring to the notice of our readers.

The organizers of the First International Orthodontic Congress evidently felt it their bounden duty to create a precedent worthy of being followed in the coming years, and the reviewer would like to emphasize the great debt the profession owes to Mr. William Fisher, the first President, and his able colleagues for that detailed organization which was so difficult to initiate and which resulted in such a triumphant conclusion.

It seems eminently suitable that the record of such Transactions should be prefaced by a list of the Members of the Congress, its Constitution and By-Laws and its Minutes, so that all who may be concerned hereafter in the organization of similar efforts merely should have to turn to this volume to gather all the information they need, and, incidentally, to observe how Dr. Fisher made it possible, by a gracious mixture of suavity and firmness, to keep so closely to such an exacting time table.

It is interesting to note that the appeal to common sense to create a universal orthodontic terminology for all nations led to the formation of a Nomenclature Committee whose work, at present but half done, should be continued by others in the future with greater persistence. The undesirability of creating new words and phrases without very weighty reasons is well exemplified by the unfortunate methods adopted by some of the writers of papers at this Congress. Perhaps future editors might make a point of requesting contributors to use a terminology officially accepted as the standard in all international proceedings.

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*Reprinted from British Dental Journal, July 15, 1927.

The work of ninety-three contributors to the work of the Congress is divided into papers and discussions thereon, a so-called conference, case reports, clinics and scientific exhibits.

It is significant of the trend of modern views that of the twenty-seven papers presented, only four were devoted to technic, the once all-absorbing topic, but these papers would all repay diligent study, and not only the papers themselves, but the views of well-known authorities taking part in the discussions. Connected with treatment but not technic, both Luis Subirana and Harold Chapman discuss the age for treatment, and J. H. Badcock's poorly discussed paper on the "Place of Extraction" should be carefully read. A. H. Ketcham has investigated root changes in permanent teeth and brings out some striking facts.

A welcome note was struck by the inclusion of a paper by Dr. R. C. Derivaux, M.D., on "Orthodontia in Its Relation to Growth and Repairs." Nashville is fortunate in housing a medical man who takes more than a passing interest in this specialty.

The vexed question of diagnosis and gnathostatic methods was also well to the fore, but the acid test of time is required to prove the pros and cons of these popular methods and the theories of their rival protagonists.

It seems invidious to pick out for special notice any one of many noteworthy papers. If one may be rash enough to prophesy, Friel has established definitely the correct or ideal occlusion for all age periods. A beautifully illustrated paper on the "Palæontology of the Human Dentition" will repay close scrutiny. The photographs of the cheek teeth of the dryopithicus are most striking. Milo Hellman, a most indefatigable worker, has also done an immense amount of statistical work in a thesis on development.

The tissue changes involved in tooth movement have been studied experimentally by LeRoy Johnson, as has the influence on food on malocclusion by Dr. Percy Howe. Indeed the evidence of the general desire to prove statements made showed a marked advance towards the establishment of orthodontics on a scientific and sure foundation.

Space will not permit of any detailed notice of the clinics or case reports; they are profusely illustrated and only need to be read to be appreciated. The publishers should be well satisfied with having produced such a well-bound and readable volume.

ORTHODONTIC NEWS AND NOTES

American Society of Orthodontists

A Letter from President Ellis

November 8, 1927.

International Journal of Orthodontia

Dear Sirs:

This is in response to your request for a preliminary letter of announcement relative to the next annual meeting of the American Society of Orthodontists, to be held in Buffalo April thirtieth, May first, second and third, 1928.

When our Society accepted Buffalo's invitation for this meeting it gave the Buffalo membership a deep feeling of pleasure and pride. We accept the obligation and feel sure the natural advantages of our fair city together with the excellent scientific program already largely arranged will assure to our members a still further advance in orthodontic progress and a distinct contribution to science.

Buffalo is America's convenient, delightful, interesting convention city, centrally located, easily reached by any means of travel—rail, automobile, steamship and air. Buffalo has a wealth of attractions, being in the midst of great natural resources, industry, commerce and scenic beauty. As a tourist city, it has one of the seven wonders of the world attracting millions of visitors each season. Those who pass through our city remember it as a place of exquisite beauty.

The Board of Censors and in fact the entire executive committee have functioned well in advance and very efficiently in arranging the scientific program. A number of important and timely subjects have been selected for discussion, among them being: Bone Development, Diet, Orthodontic Technique, showing in full detail the making of appliances, Endocrinology, giving original research in this field by one of our own members, Orthodontic Bibliography, Orthodontic Education, Orthodontic Research and Orthodontic Metallurgy. Authorities in these respective fields have already been secured.

Ten carefully selected case reports will be presented. A luncheon round table discussion will be scheduled with plenty of time allowed for the discussion and report. A competitive clinic is being arranged, each of the several orthodontic societies entering a team to compete for a new loving cup which has been provided as a permanent trophy.

It is planned to arrange for a full day of recreation with a motor trip down the river to Niagara Falls, gorge route trip, visit to Canada, luncheon, golf and other sports, sightseeing along the Niagara River so rich in scenic beauty and historic lore.

This meeting will offer an excellent opportunity to clarify some of our orthodontic problems and at the same time to enjoy a delightful holiday. A very large attendance of members, their families and guests is anticipated. Make your arrangements now. Come to Buffalo. Attend the meeting of the American Society of Orthodontists and see Niagara, is our call.

Sincerely yours,
Walter H. Ellis, President

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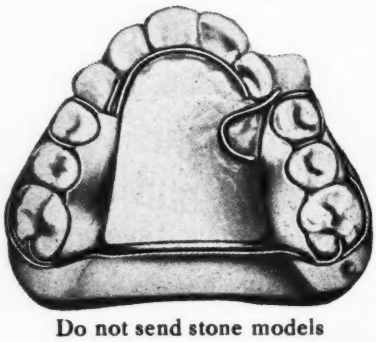

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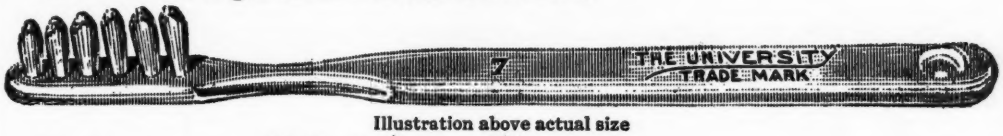

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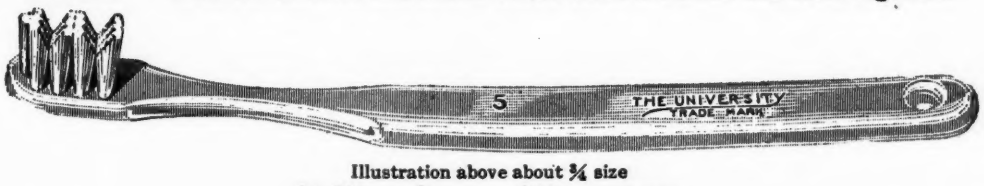

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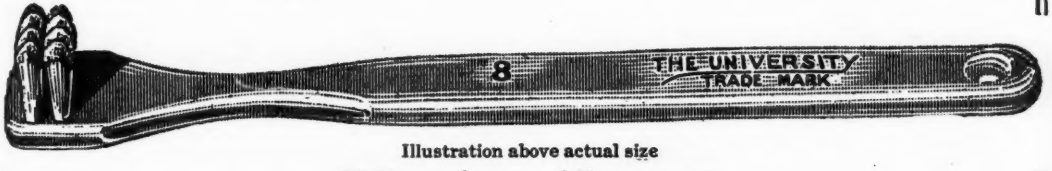

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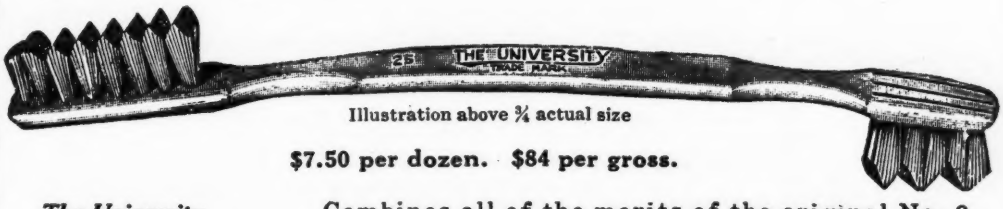

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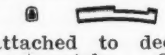

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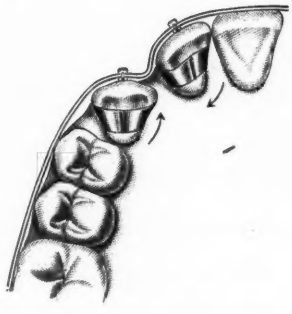

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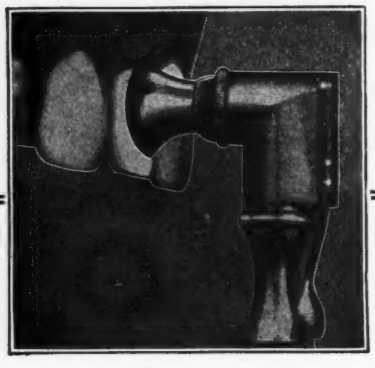

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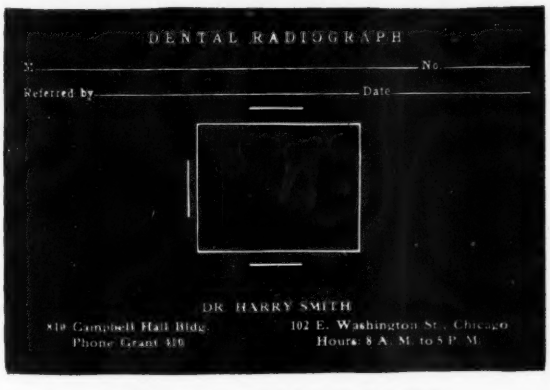

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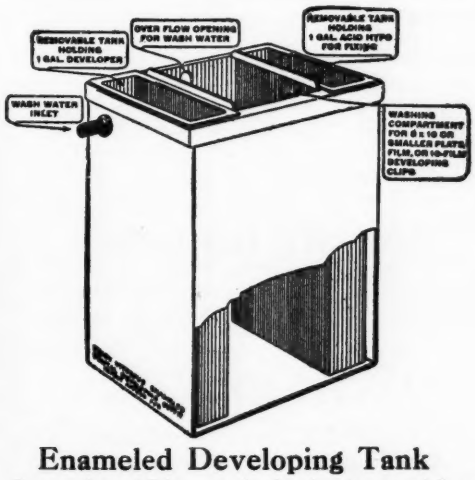
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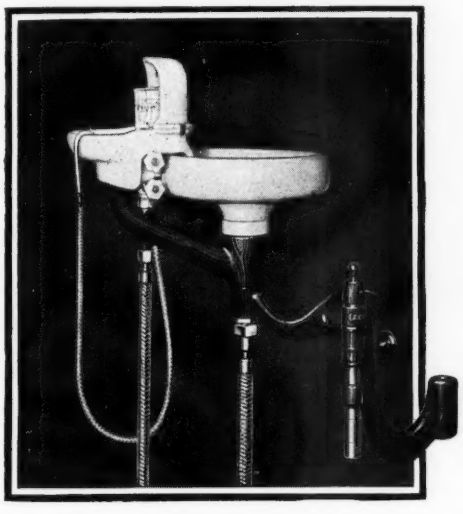

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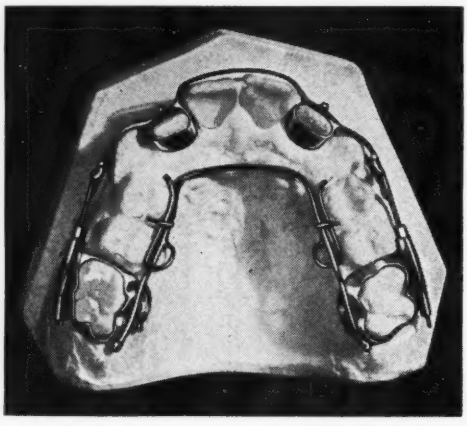

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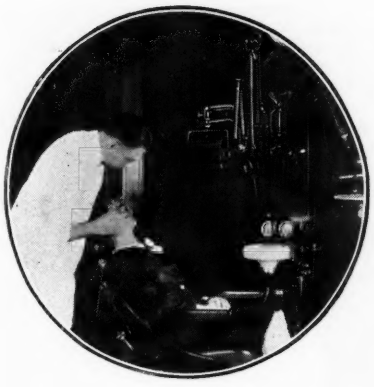

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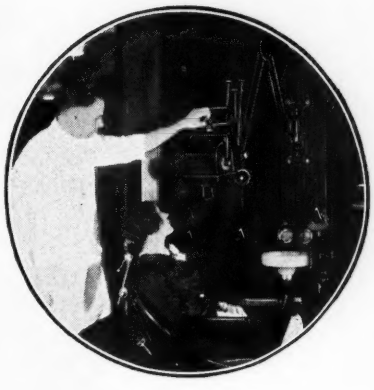

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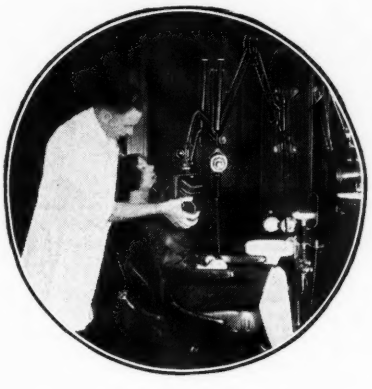

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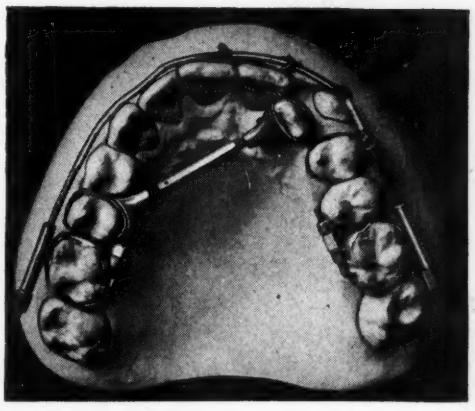

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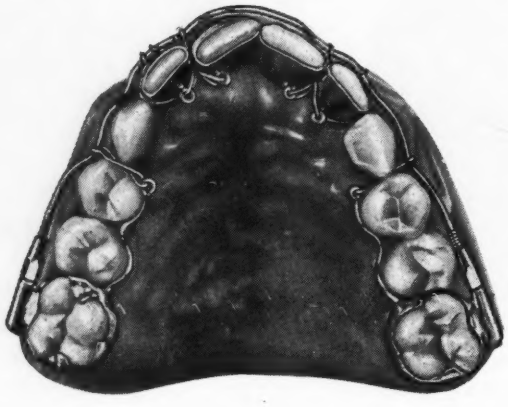

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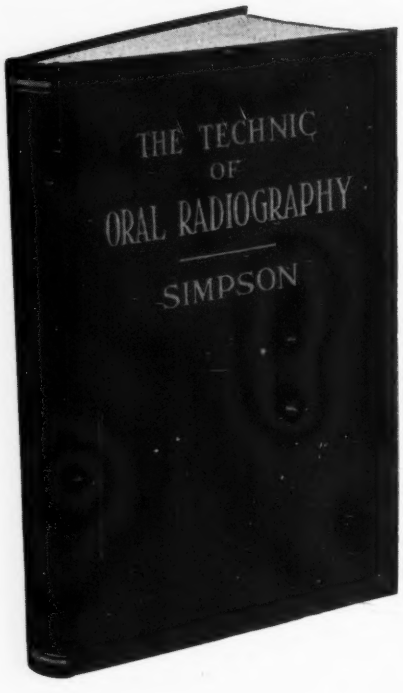

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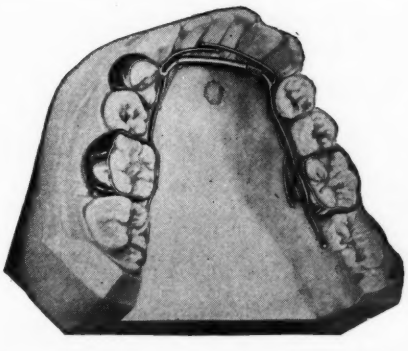

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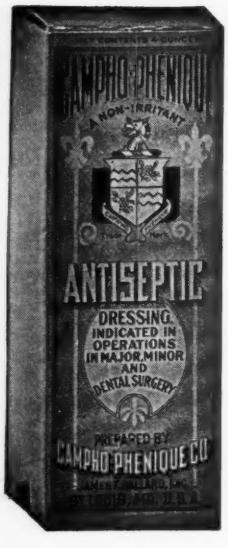

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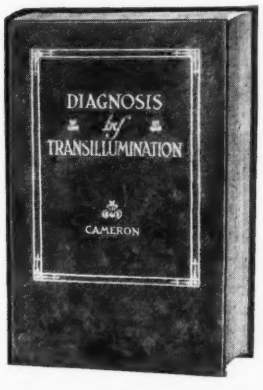

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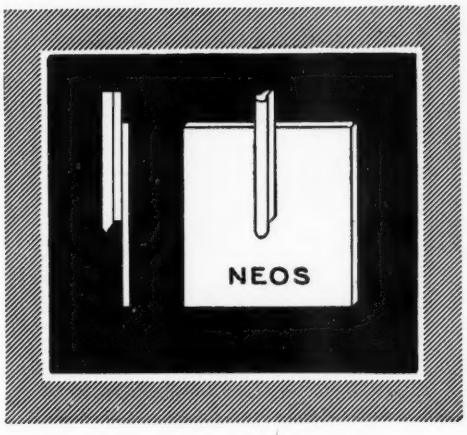

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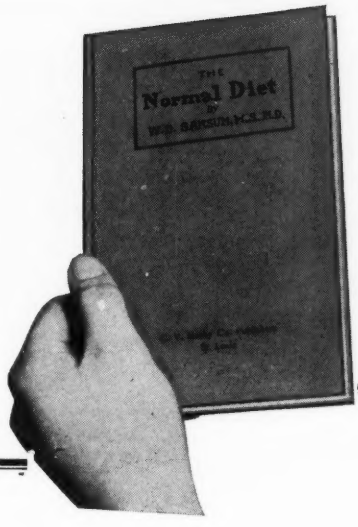

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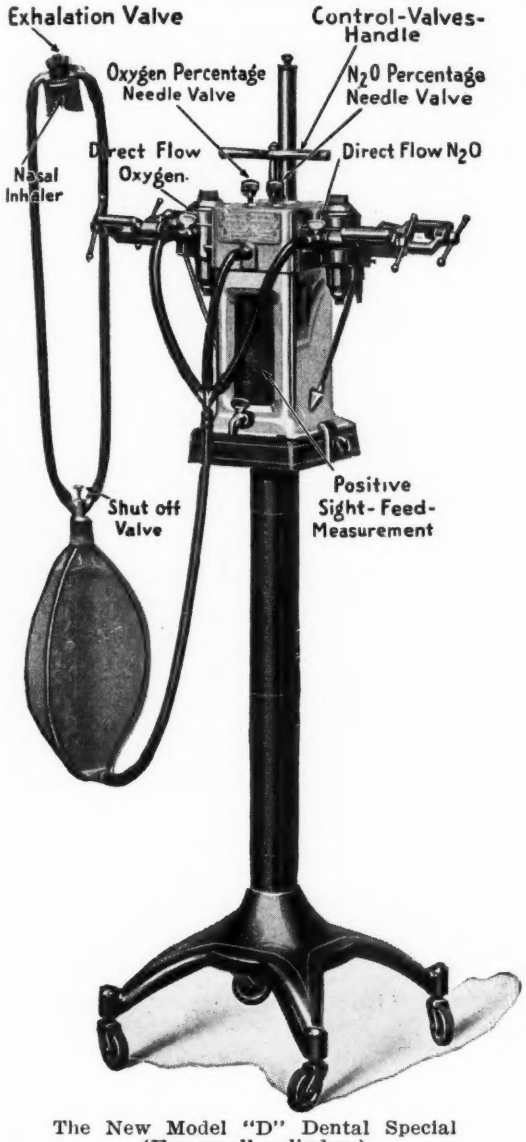

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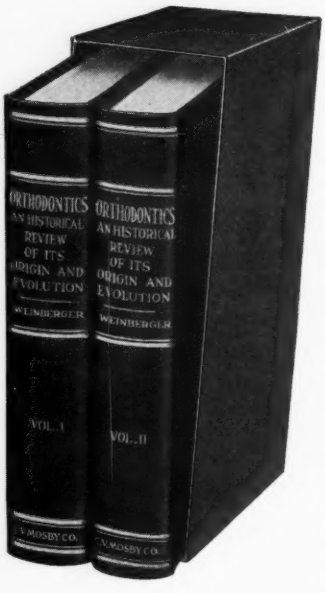

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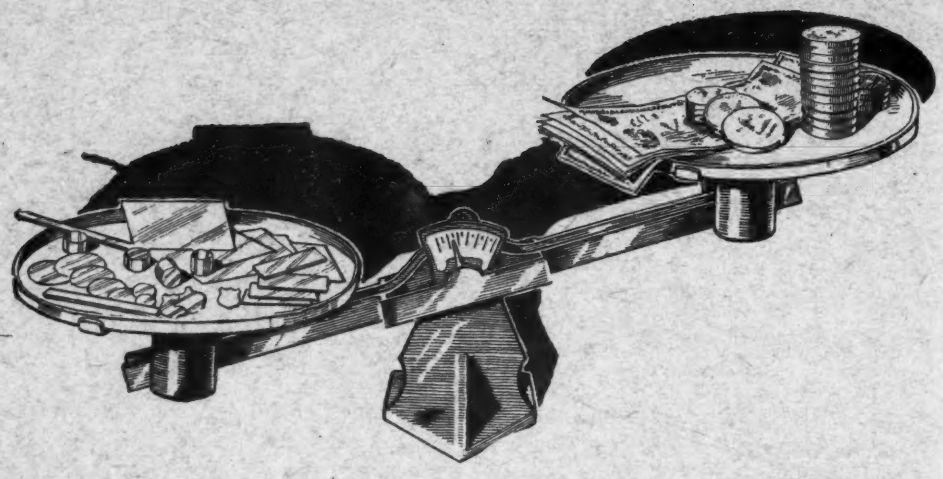

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